TEXTILE WORLD

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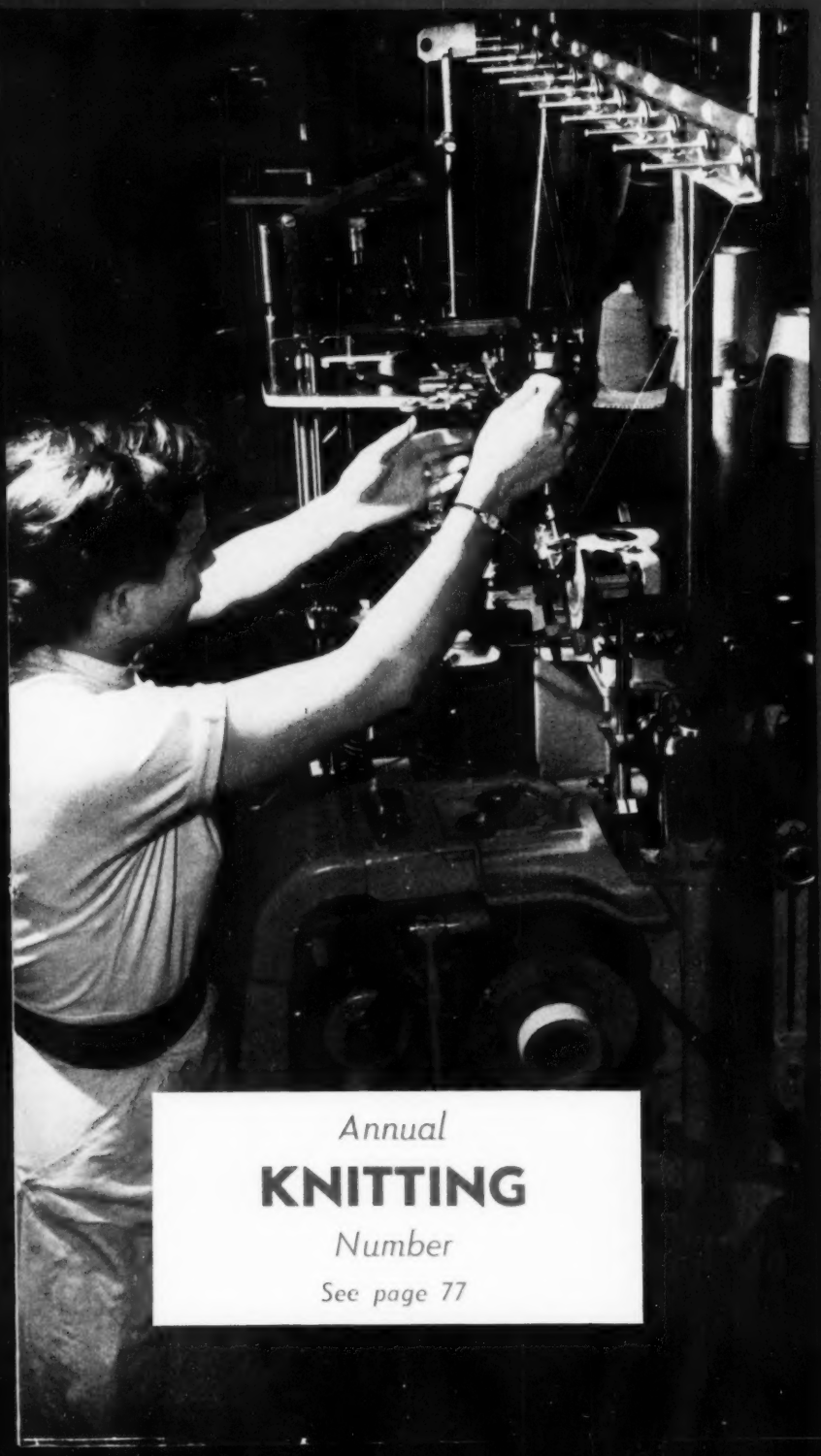

Annual

KNITTING

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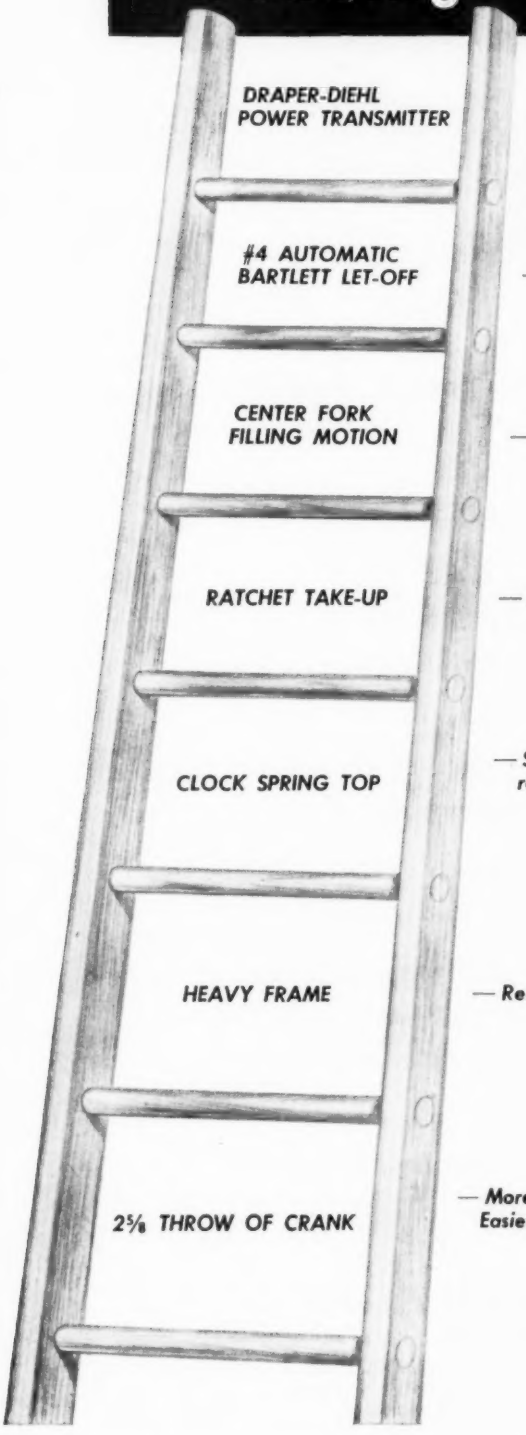

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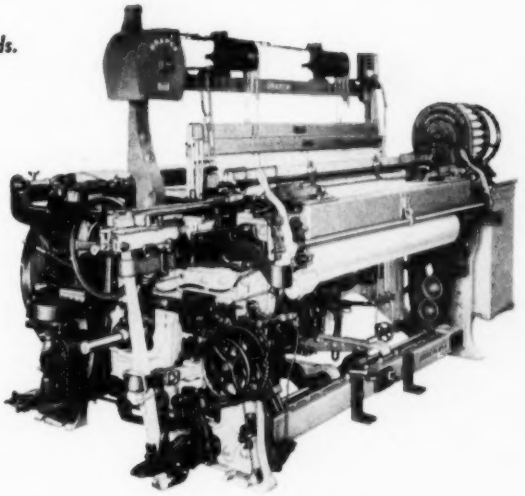

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THE Long-Range VIEW

Let's Leave Preachers Out of It

A few days ago we read that the CIO was threatening legal action against seven preachers in a community in North Carolina. The complaint was that the preachers had mailed a letter to the employees of a certain textile mill advising them not to accept the CIO as their bargaining agent.

If this had been the only instance in which representatives of churches had been tangled up in mill-and-union competition, we would have thought little of it. But we've heard it before. In the Senate investigation a few years ago when Emil Rieve charged that there was a "conspiracy" in the South against the CIO, ministers in Anderson, S. C., were brought in for blame. Also a few years ago, the CIO tried to trick a group of ministers in Columbus, Ga., into endorsing the CIO. In a mill in Alabama, we saw a preacher, who was also an employee in the mill, turn into a Scripture-quoting union organizer.

Regarded in any light, these are vile and evil practices. From earliest childhood, workers have been taught the tenets of religion and to have great respect for preachers as the nearest approach to holy men that we have. When even one of these men forsakes his calling and shows himself willing to sacrifice his people for economic gain, he is unworthy of his calling and the respect accorded his office. He indeed has feet of clay. When an organization shows itself willing to use this respect to exploit the workers, it is exhibiting a most craven love of profit.

In these particular instances, no pattern of blame can be traced. In the current North Carolina incident, the preachers are at fault. In the Anderson, S. C., case, the evidence presented was so cloudy that no clear picture of guilt could be drawn. In the Columbus, Ga., incident, the fault lay entirely with the union; the ministers did not fall for the trick. In the Alabama case, the blame lay with an individual.

One cheering note in the whole matter is that in every instance the mill, or mills, involved seemed innocent, so far as positive action is concerned. It is our opinion that few, if any, mills are narrow enough to traffic in religious emotions for profit. It is to be sincerely regretted that some preachers and some union workers are not of equal caliber.

As everyone knows, the history of our religion is one of the seamiest sides of the record of the human race. In every age, church leaders corresponding to preachers of today have taken advantage of prejudice, ignorance, fear, and emotional instability to profit for themselves and the church. In certain countries even today the church maintains labor unions—not to fulfill the function of labor unions as we know them, but to keep workers under control, for the benefit of the state, industry, and the church. We are told, for example, that textile mills in some of these countries make rich gifts to the church in return for the church's influence over workers.

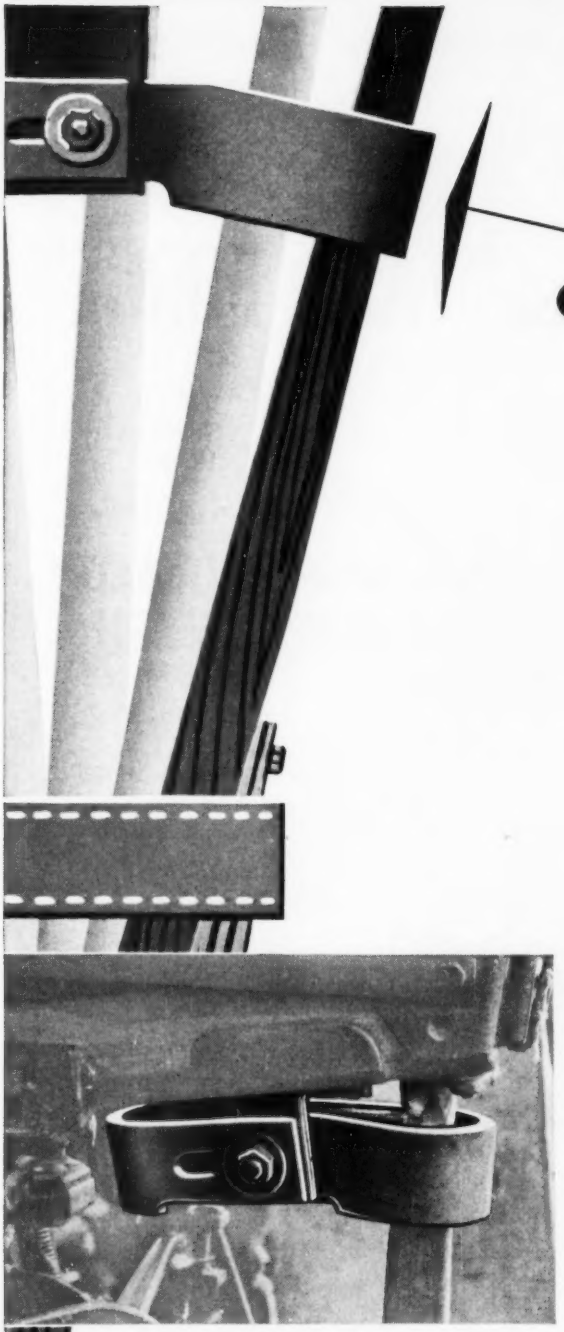
Obviously, such practices are hangovers from the Middle Ages. They had their beginning in feudalism and have been carried over as lack of social progress into the present industrial age. They are as out of place now as a bow and arrow is as a weapon of war.

There is so much to condemn in CIO techniques that you are not surprised to see representatives of this organization trying to take advantage of workers' religious nature. But villainy is compounded when preachers turn out to be throwbacks to an age when people were prey to ignorance and treachery. Fortunately, the vast majority of preachers are not of this character but are upright men sincerely interested in the spiritual well-being of people.

In the present social structure where a mill and village are built in somewhat isolated places and are maintained as a separate municipal unit, the mill is a powerful social factor. Such a structure is an ideal setup for bringing improper pressure to bear on workers. While we believe that no responsible mill organization would think of creating such pressure, we think it is likely that some mills might commit the sin of omission by just keeping quiet when an overzealous preacher steps out of bounds in the mill's favor. Mills should consider that they are morally obligated to actively reject such unsought support.

It has been a long, hard, and expensive task to bring the textile industry to its present state of progress and maturity so that it commands the respect it deserves. All of us connected with the industry are anxious to keep it that way. We should therefore look upon it as a real and personal duty to protect the reputation of the industry against misdirected do-gooders.

A. M. Thomas



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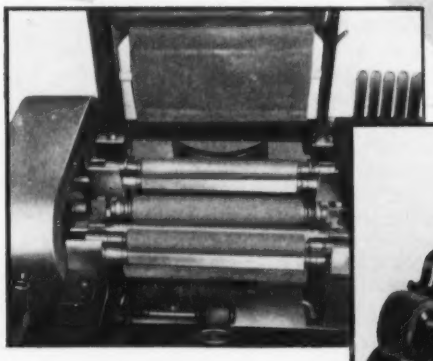

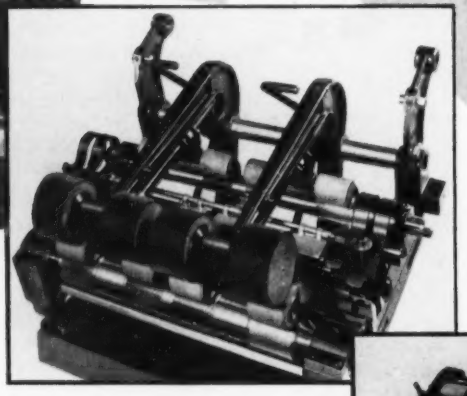

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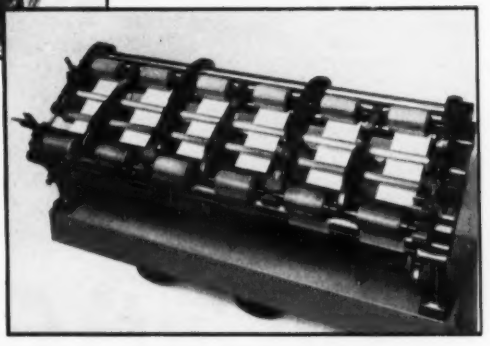

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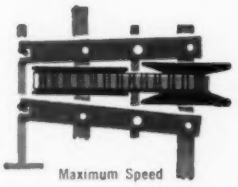

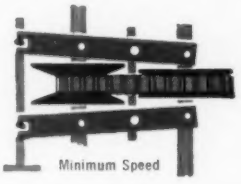

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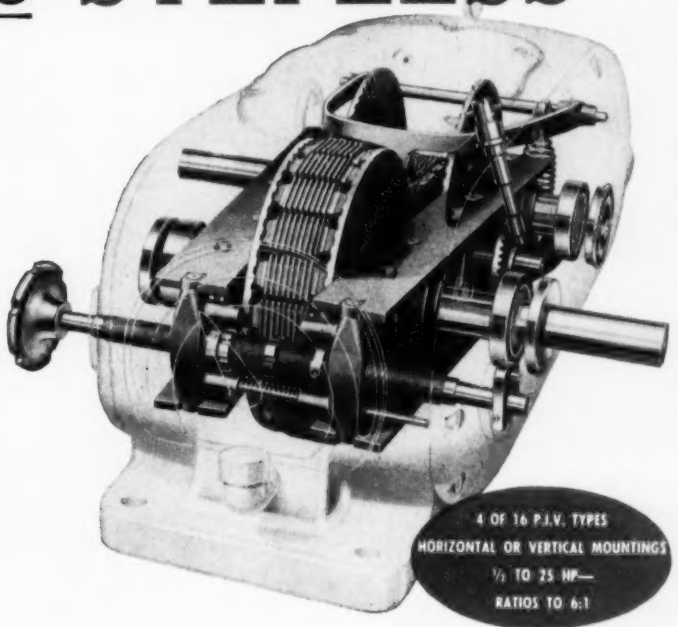

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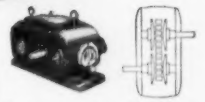
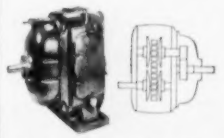


Basic, Positive, Infinitely Variable (P.I.V.) Speed Drive.



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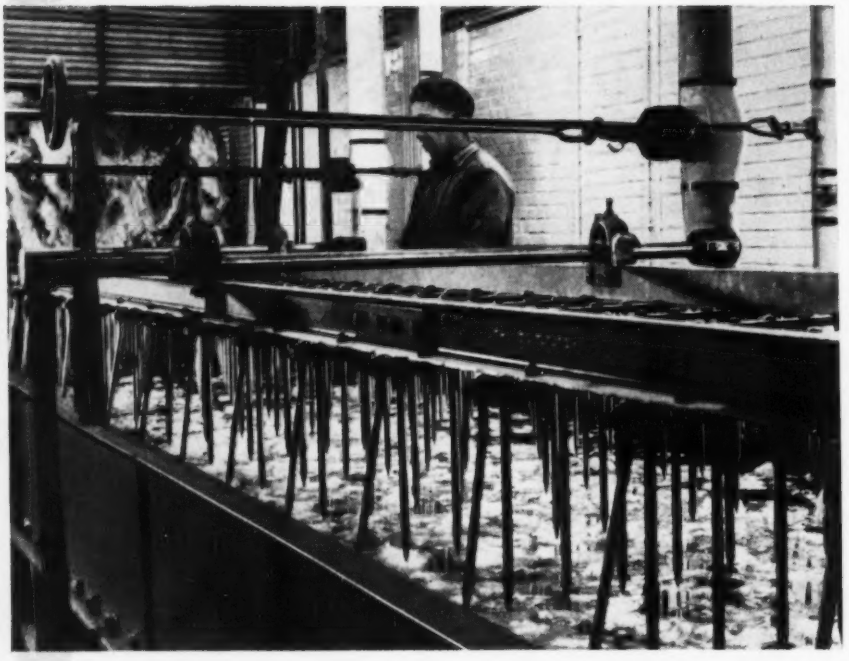

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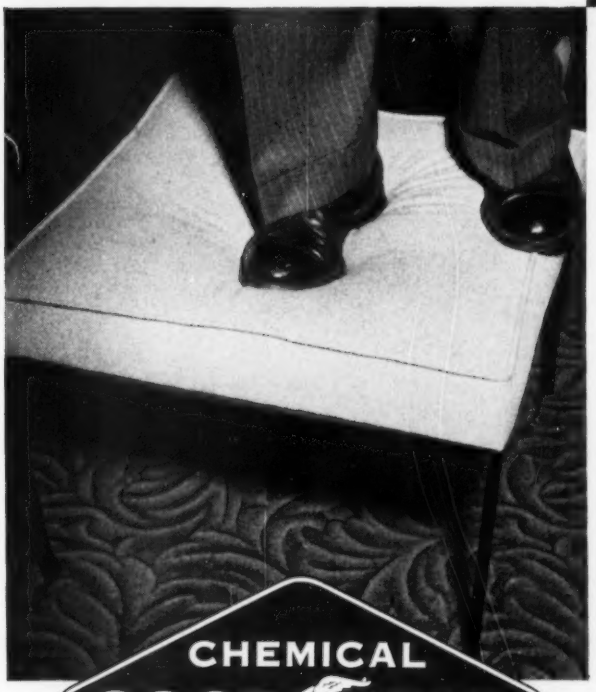

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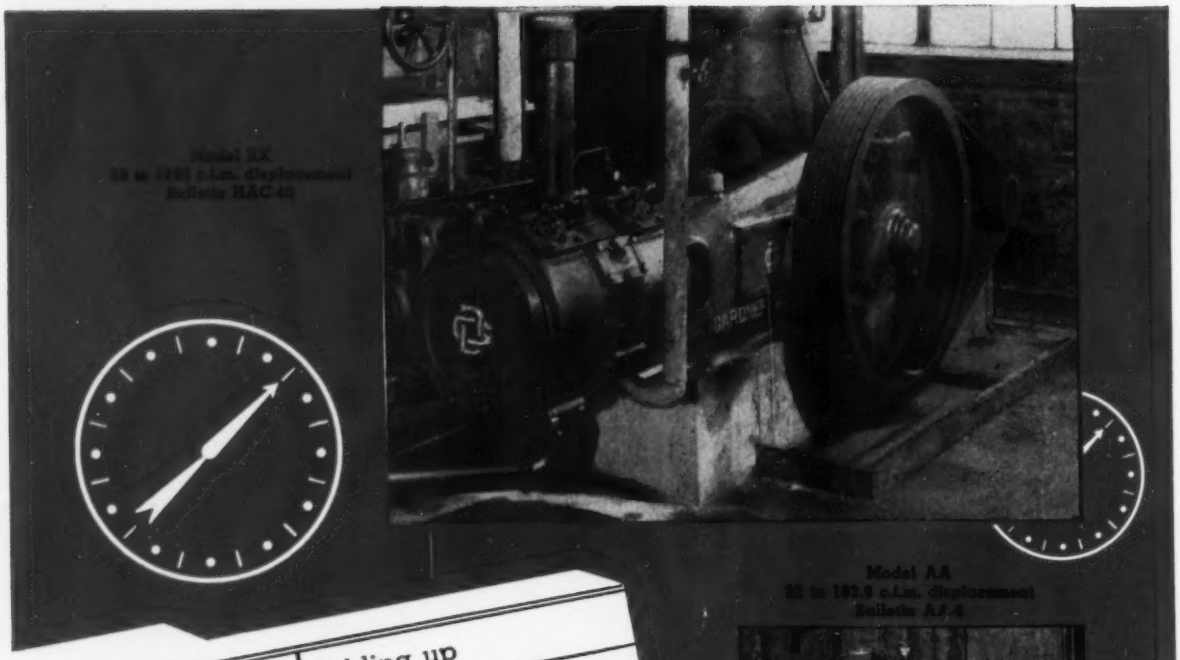

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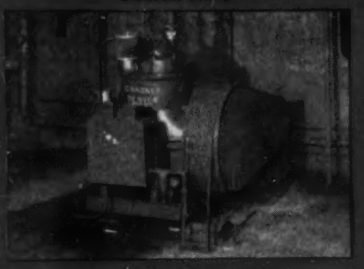

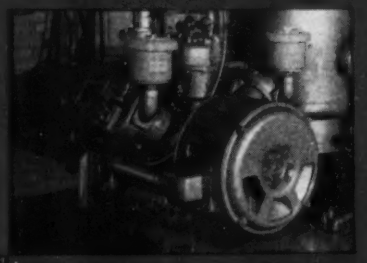

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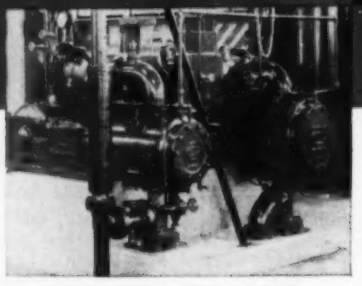
Bulletin WB-10



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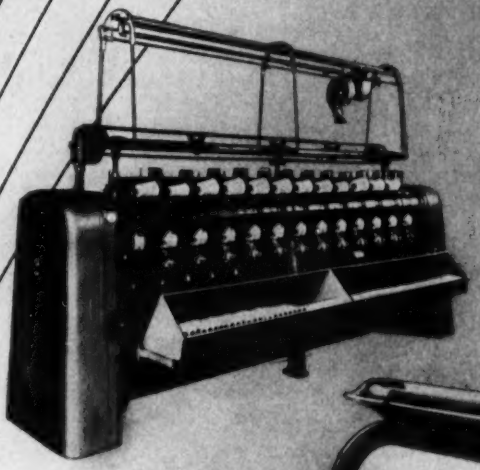

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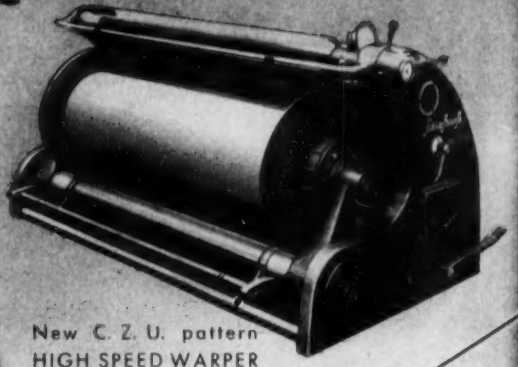

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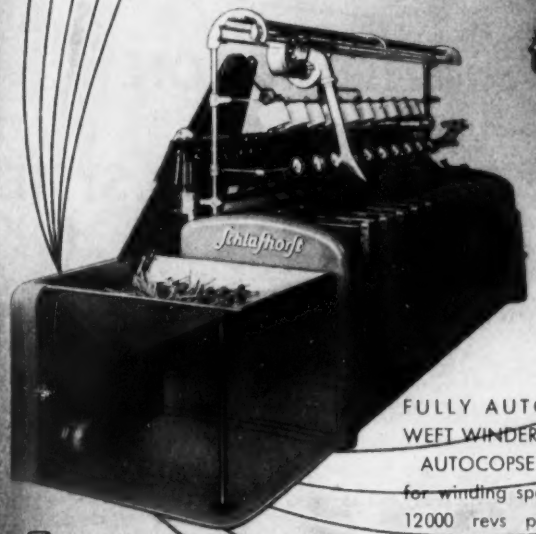

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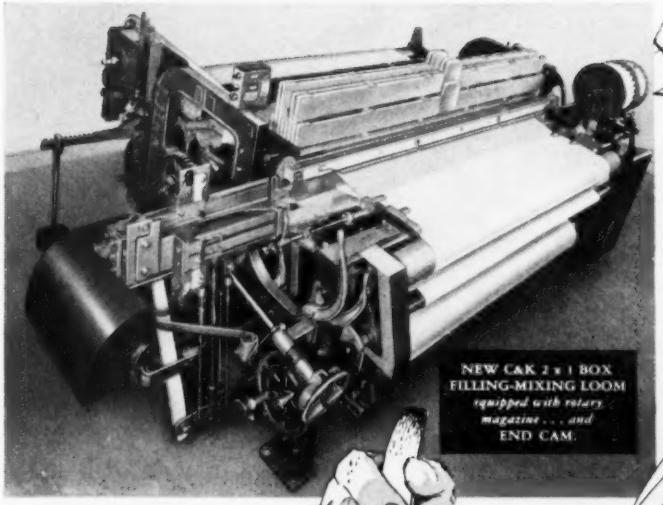

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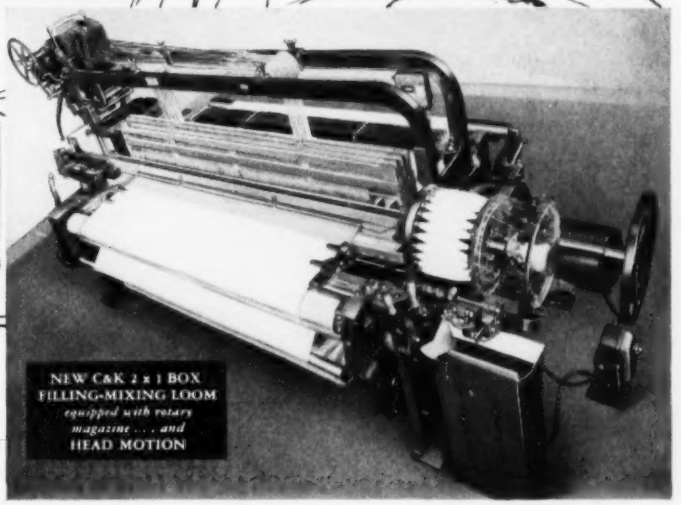
Something NEW



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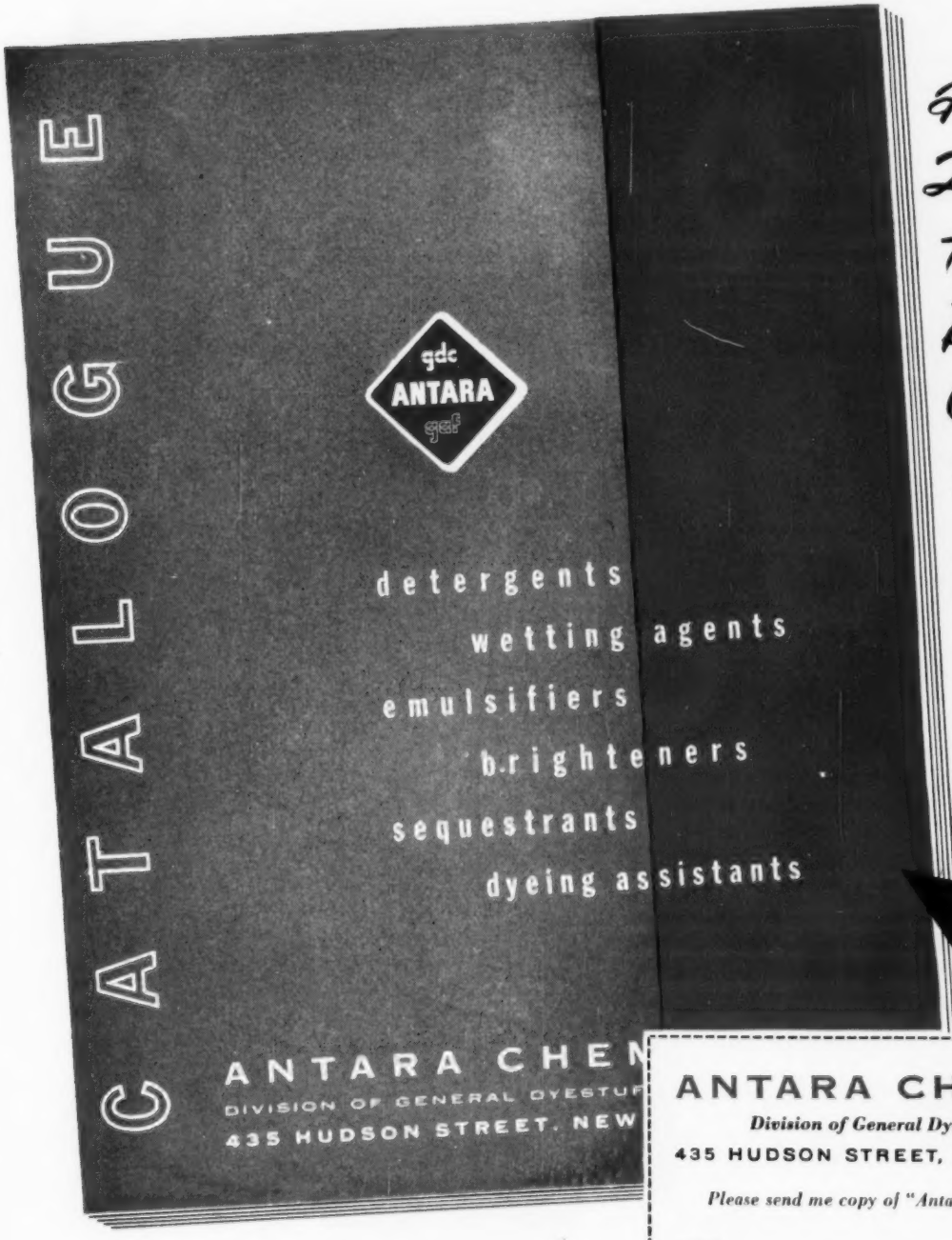

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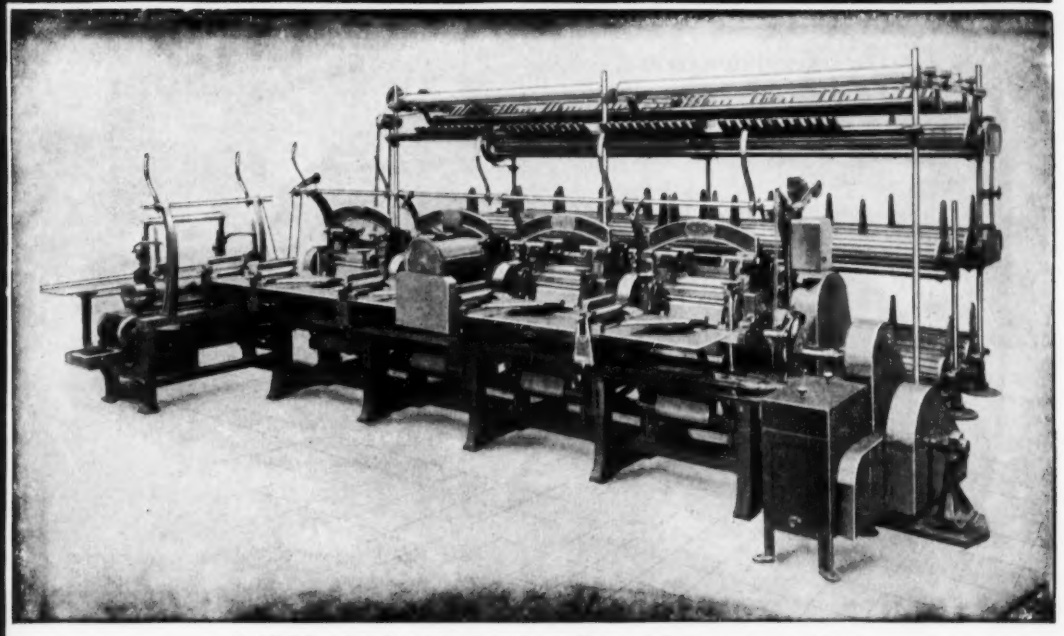

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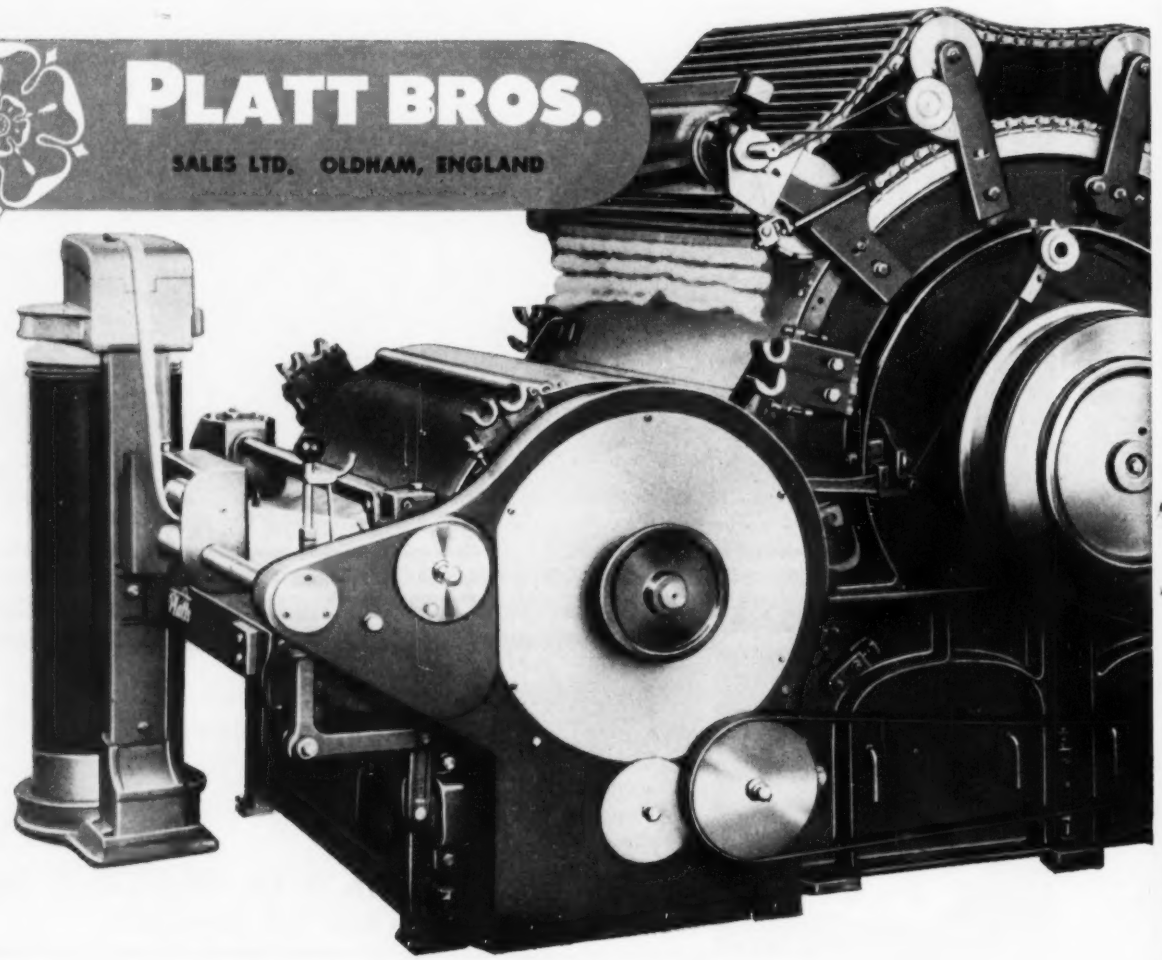

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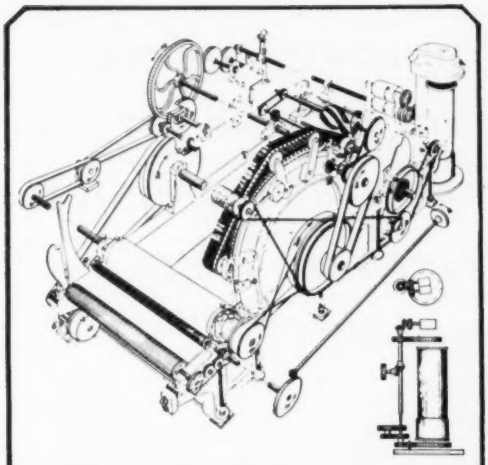

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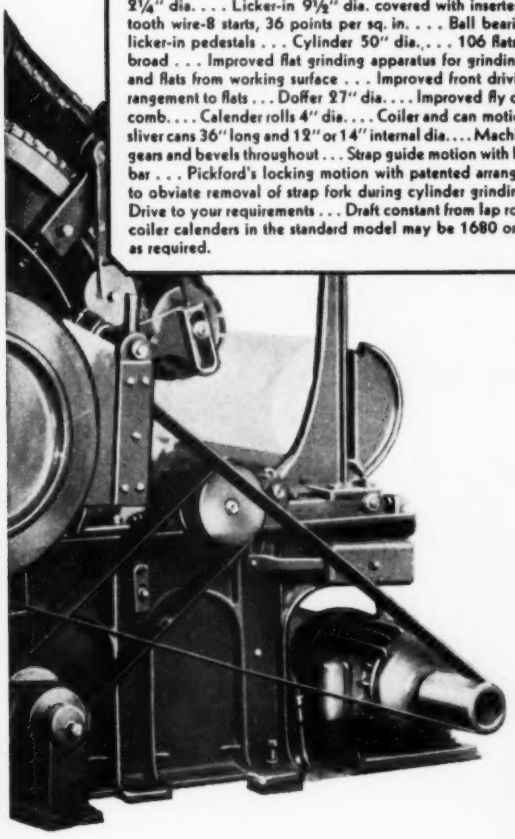

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Being engineers and agents for every type of cotton preparatory machinery gives us a broad perspective; an understanding of the interdependence of machines; you might say the ability to see *the forest* and *the trees*. May we be of service to you in selecting a single machine or a complete mill?

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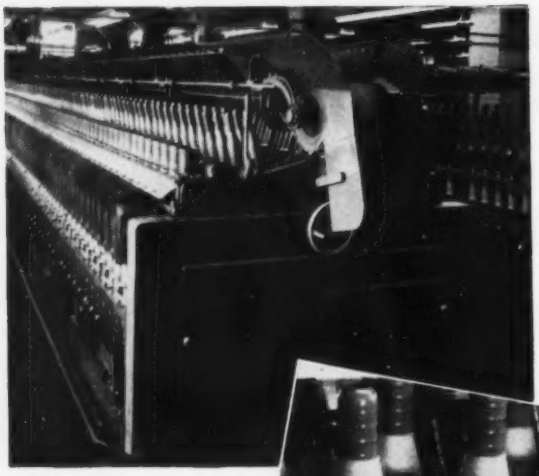
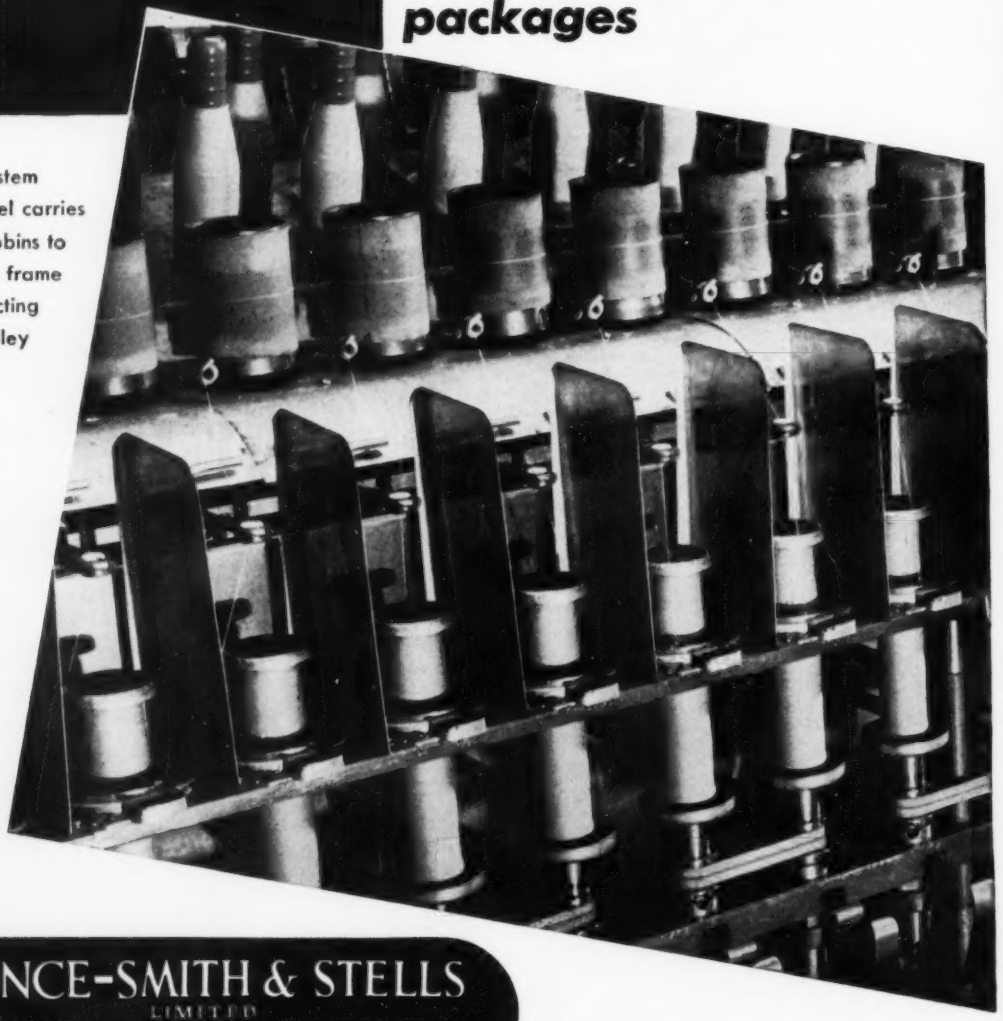


Prince-Smith & Stells improves 2-fold ring twister for fine count worsted yarns on large packages

A conveyor system above the creel carries the empty bobbins to the end of the frame without obstructing the working alley with trucks.



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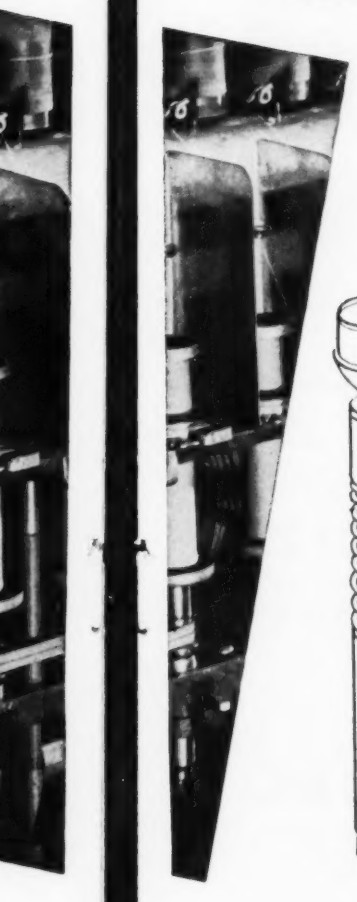
IF YOU do two-fold twisting of worsteds, you will find this a very practical machine. It will give you all the time-saving advantages of large packages, together with full twisting control for even fine counts. Increasing the size of the dolly rolls to a 3" diameter gives a more accurate tension control and consequently a better yarn. New type spindles eliminates vibration and increases speeds. They require lubrication at only 2,500 hour intervals thus reducing the hazard of oil in the yarn area. Ball bearing tension pulley assemblies save power and tape wear. An adjustable change speed device permits quick alteration of spindle speeds. Combination creel allows you to run from either bobbins or large cones interchangeably. A simplified, rail lifter motion (each side separate) affords accurate, easy alterations for fine or coarse counts. The entire machine is designed for years and years of low maintenance service. For further information please contact Atkinson, Haserick & Co.



ABSORBS VIBRATION

The new Hoffman roller bearing spindle insert has a spring and sleeve which absorbs vibration between the rail and the bolster. The free running spindle uses less power and reduces tape slippage. The knee brake mechanism lifts the complete spindle unit from its normal position causing the top flange of the wharle to make contact with a stationary brake shoe.

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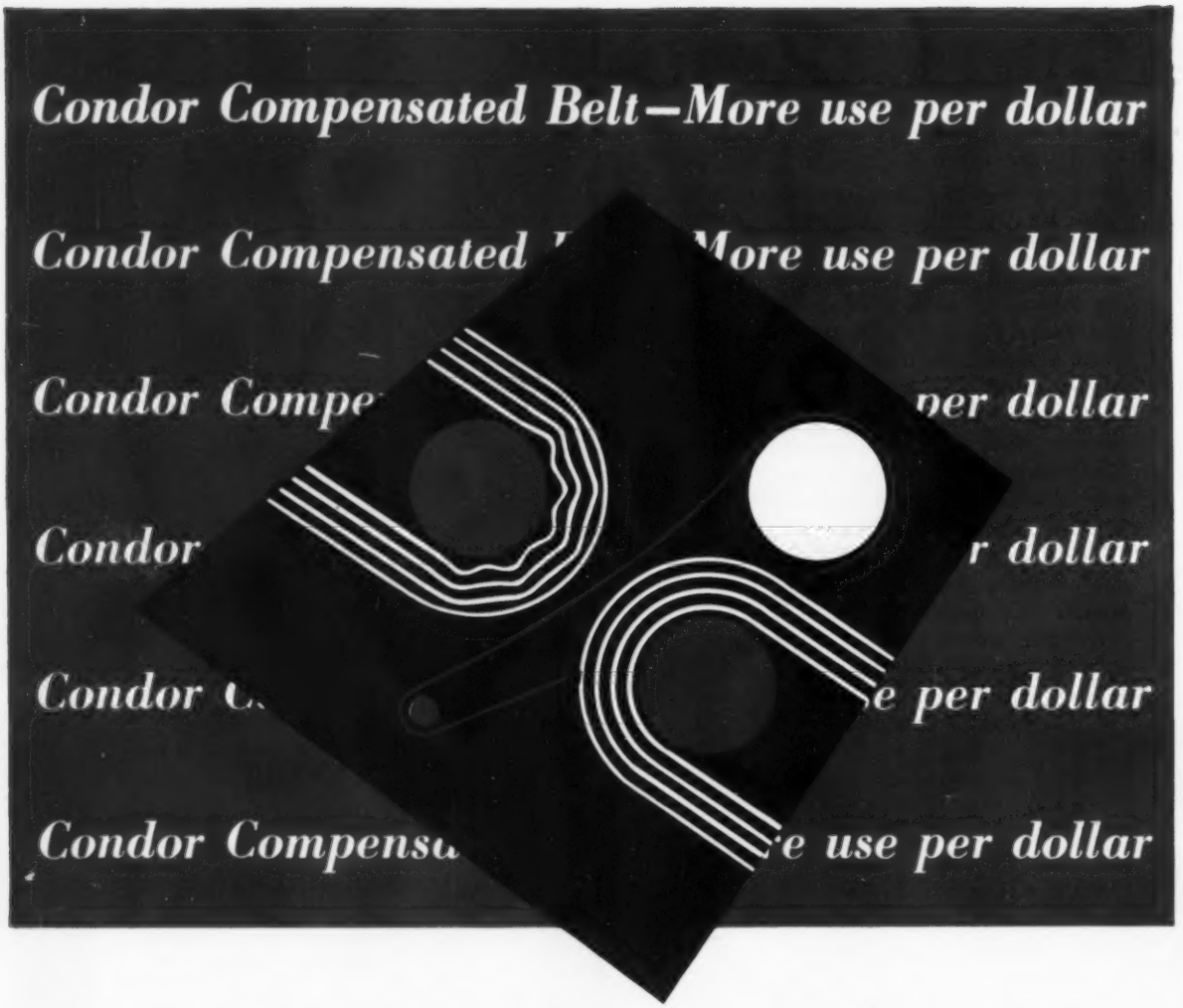
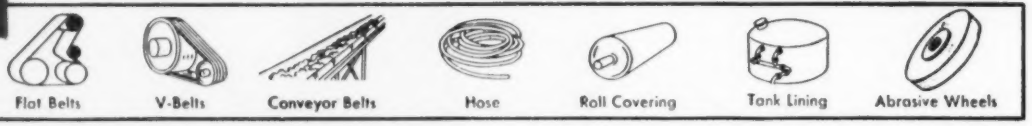


MORE PULL IN EACH PLY . . . . When Condor Compensated Belt rounds the pulley every ply is under uniform tension (illustration, right). There are no "loafing" inner plies or over-worked outer plies to rupture and start belt failure (illustration, left). This exclusive R/M method of equalizing ply stresses was developed by R/M engineers to eliminate fastener troubles and ply separation. A selection of driving surfaces for various tension requirements is available. This all adds up to MORE USE PER DOLLAR. Ask the R/M distributor for Bulletin 6808. He can also help you get MORE USE PER DOLLAR with R/M hose, conveyor and V-belts.

R/M

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.



Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Packings • Brake Linings • Brake Blocks
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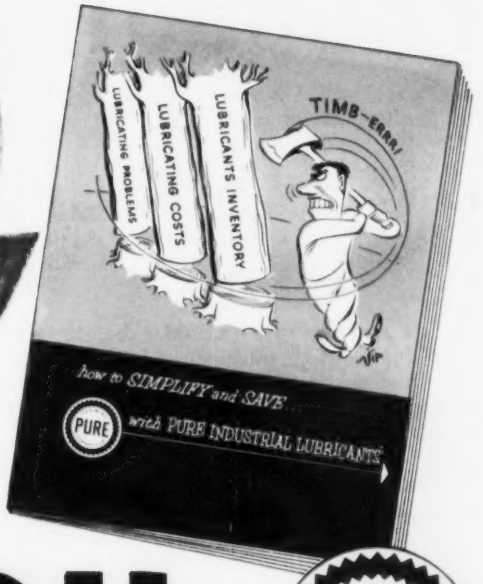

This 12-page, 8½ x 11-inch illustrated booklet that explains, in complete detail, how you can simplify and save with

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Pure Oil specializes in top-quality *multi-purpose* oils and greases—each one designed to do a number of *different* jobs instead of just one specific job. And do each job *equally well*.

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PRODUCTION UP 18% WITH 5 TO 1 LABOR SAVINGS!

AT AN EASTERN MILL, under the old system of yarn processing that required six steps up to and including the reducer, one operator could produce only 32 pounds per hour. Now, with Pin Drafters doing the same job in only three steps, the hourly production for one operator is 165 pounds —*better than 5 to 1.*

Other production improvements also resulted from the Pin Drafters' use in the combing and drawing departments. Packaging has been cut in half—from 64 packages weighing 5 pounds each, to 32 packages weighing 20 pounds each—thus enabling the reducer to run 8 to 12 hours without creeling. Waste has also been reduced considerably.

The Pin Drafters are used to parallel, draft, and integrate both wool and nylon at this mill, producing a loftier, more even, and better appearing yarn.

If you would like to investigate the profit possibilities of using Pin Drafters in your plant, call in our Field Engineer in your territory. He'll give you complete details and show how it will fit into your operation.

WARNER & SWASEY PIN DRAFTER

- Eliminates costly steps in preparation of sliver for roving
- Produces better, more evenly blended sliver in greater volume
- Uses either combed sliver or ball top
- Discharges to coiler cans or to single or double mache balls
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YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

For more information, write direct or use Reader Service post card.

MACHINE MILESTONES... MEASURED IN OIL! The impressive record of petroleum "firsts" listed above spans 87 years of industry's most spectacular progress. From the first mineral oils for machines in 1866 to the first oils for Diesel engines, cars, planes—right on up to correct lubrication for the world's fastest superliner—Socony-Vacuum has pioneered the development of the products that have helped make these advances possible. Today, this wealth of lubrication knowledge and experience is yours—to help boost your output, cut your maintenance costs. Why accept anything less?

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WHAT *Life-Lines* REALLY DELIVER IS MORE SERVICE...LESS SERVICING

New textile booklet

answers important motor and control application problems

You'll see answers to typical problems like these:

the problem of lint . . . of shock and vibration on looms . . . of overloads
. . . of corrosion . . . of power consumption in weave rooms
. . . of speed tension and control

In addition are discussions on lubrication, maintenance and installation . . . on centralized motor control. In fact, it is the purpose of this booklet to analyze major motor and control application problems and provide solutions.

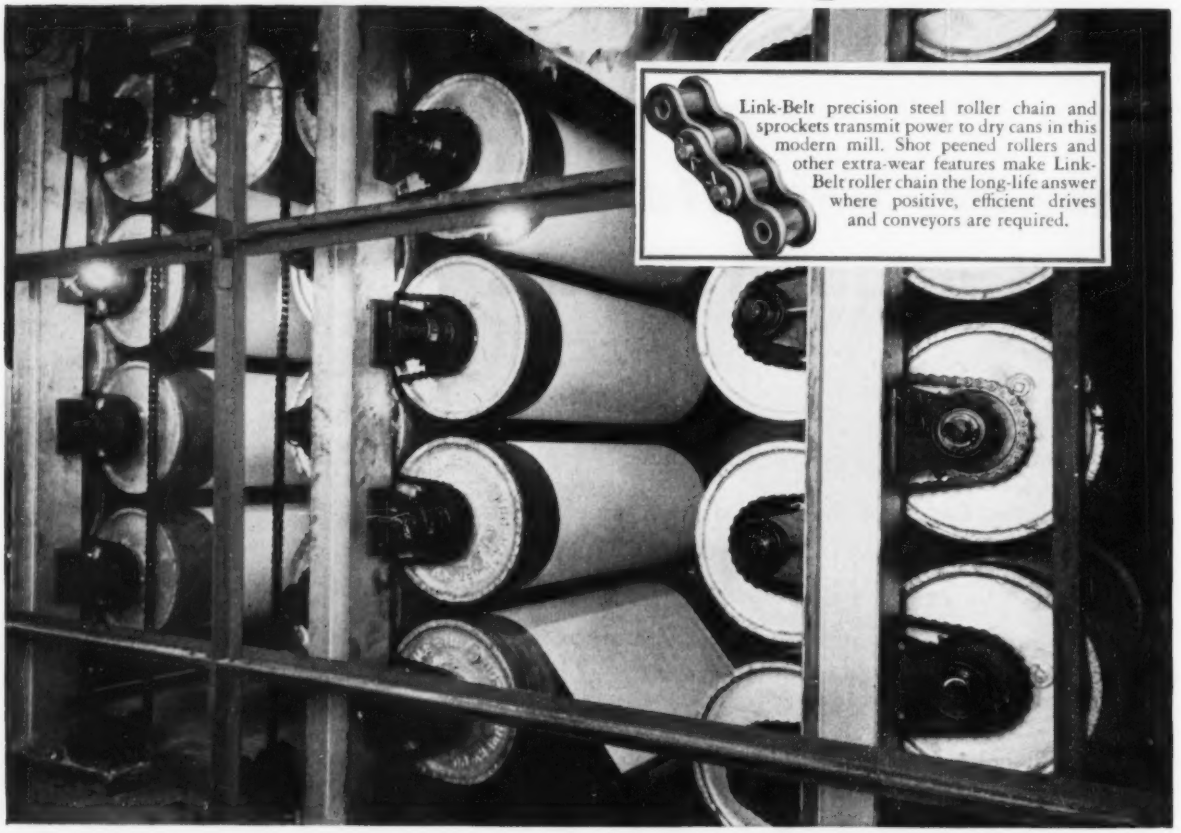
Also included is information on Westinghouse motor and control equipment for the textile industry. You'll see why the pre-lubricated bearings of Life-Line are setting new standards for the industry . . . how exclusive features of the loom motor starters protect against lint fires. A comprehensive list of available literature with data is included, plus a postage-paid reply card for your convenience in ordering additional information.

Get the facts on the most complete and most advanced line of motors and controls available today. Ask your Westinghouse representative for your free copy of this new textile booklet "Motors and Controls in the Textile Industry", B-5422, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-21700

YOU CAN BE SURE...IF IT'S
Westinghouse
Life-Line
MOTORS and CONTROLS

Is there one chain that best meets your drive or conveyor problem?



Link-Belt precision steel roller chain and sprockets transmit power to dry cans in this modern mill. Shot peened rollers and other extra-wear features make Link-Belt roller chain the long-life answer where positive, efficient drives and conveyors are required.

You'll find the answer in LINK-BELT's complete chain line... a size and type for every job

The application shown above is an example of how you can select the *one* chain best suited for a particular need from the complete Link-Belt line. And each chain is engineered to provide more efficient service at lower cost than so-called general purpose chain.

Whatever your requirements, you are assured of the *right* chain for the job when you rely on Link-Belt. And, remember—a chain bearing the Link-Belt double >—< arrow is your guarantee of longer chain life.

For information on the complete Link-Belt chain line, see the Link-Belt representative near you. He has the answers for efficient, low-cost drive and conveying chain performance.

LINK-BELT

CHAINS AND SPROCKETS

Typical chains from the complete LINK-BELT line

Ewart Detachable Link-Belt—A widely used, popular chain for average or normal-duty service on conveyors, elevators and drives.

Class 400 Pintle Chain—Closed end design keeps out dirt, makes excellent service medium for drives, elevators, conveyors.

Double-Pitch Precision Steel Roller Chain, for conveyor and power transmission applications.

Silent chain, for smooth, high-speed drive service, from fractional to 2500 horsepower.

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities. 13.181-C

He found STATIC fun... but you don't

In 1672, Otto Von Guericke discovered how to chase a feather around the room with his newly invented electrified sulfur globe. Some fun!

But Otto didn't have the problem that you have—of making static-loaded textile fibers behave as required. For you, electrical repulsion proves only a headache, no fun.

Nopco didn't discover static electricity, to be sure. But we have developed new and successful ways to control static in textile processing... have pioneered the development of anti-static chemicals for natural and synthetic fibers alike.

You'll find the use of Nopcostat* fiber treatments invaluable. For Nopcostats are remarkable static reducers.

More. Each Nopcostat lubricant is designed to give you "balanced" performance and assure not only effective static control, but...

Proper coefficient of friction (fiber-to-metal)
Fiber-to-fiber cohesion
Freedom from gumminess
Easy and thorough scouring

Nopco representatives are technically trained—will gladly work closely with you in the selection and application of the Nopcostat suited to your needs. Write for further information now.

*Reg. U.S. Pat. Off.

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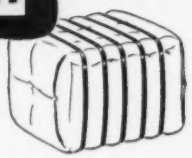
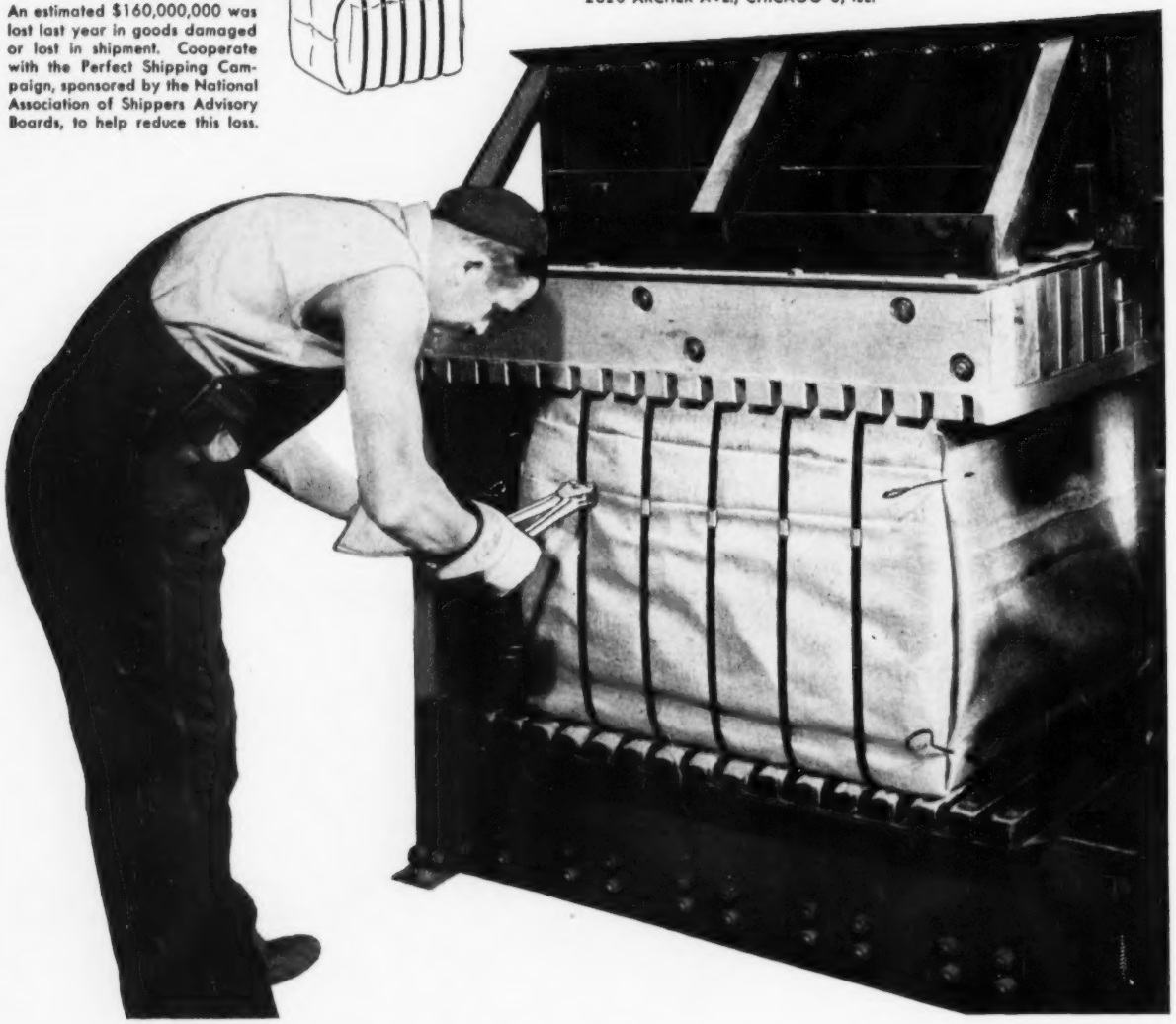


An estimated $160,000,000 was lost last year in goods damaged or lost in shipment. Cooperate with the Perfect Shipping Campaign, sponsored by the National Association of Shippers Advisory Boards, to help reduce this loss.



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14th Century Peruvian Fabric.
Museum of Art,
R. I. School of Design.

. . . then as now

YARN DYED FABRICS were Supreme

This yarn dyed fabric from Peru was loomed in the 14th Century, generations before the discovery of America.

The Inca weaver knew no more of cloth-making tradition in Europe, Asia or Africa than in Atlantis or the fabled Land of Mu. Yet color was used artfully, as in every land and every age, to make this fabric more desirable.

Always, fabrics whose patterns were created from colored yarns have won highest favor and appreciation. For exceptional quality in your colored yarns and expert advice in their use, trust to Franklin Process – yarn merchants and the largest package yarn dyers in the world.

YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD

Franklin Process

New York Representative – 40 Worth Street

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Greenville Chattanooga

when the service is as important as the product

Service is an important value in modern enterprise. Just for example: How could television have become such a major factor in our economy — if every set owner had to do his own tinkering, instead of calling the service man?

As for card clothing, quality is indispensable. But quality alone isn't enough — unless the product is available quickly and conveniently, unless you're sure to get the best type of card clothing for your purpose, unless efficient installation service is near at hand, and you can be sure of technical assistance when you need it.

Ashworth Service is as good as Ashworth Card Clothing — and that's the best. Our 3 factories, 6 repair shops and 7 distributing points — all strategically located in major textile areas — assure adequate supply, prompt deliveries, convenient repair service.

Our practical card men are always on call — ready to give you technical service, survey your cards and recommend necessary repairs. Write to our nearest plant for full details for Ashworth Service.

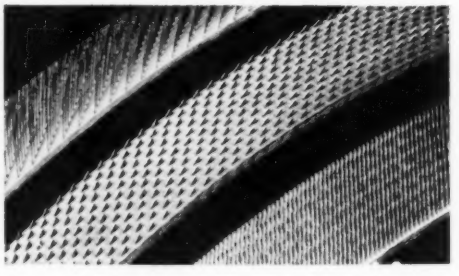
ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
Factory* Repair Shop† Distributing Point‡

Ashworth **CARD CLOTHING**

3 FACTORIES **6** REPAIR SHOPS **7** DISTRIBUTING POINTS



EACH A SPECIALIST ON HIS OWN FIELD : INGOLSTADT SPINNING MACHINERY FOR COTTON-WORSTED-CUT RAYON. * * * * * * * * * * * * MAK CARD SETS, SELF-ACTING MULES, RING SPINNING FRAMES. * * Schlafhorst MACHINES FOR WINDING, WARPING AND SECTIONAL WARPING. * Sucker SIZING MACHINES, SIZE MIXING AND COOKING INSTALLATIONS. * B. Thies DYEING-AND BLEACHING PLANTS FOR YARNS AND CARD-SLIVERS OF ALL KIND. * * * * * * Astra WEAVING MACHINES FOR COTTON-, WOOL- AND SPECIAL FABRICS e.g. FELT-CLOTHS, JACQUARD-WEAVING MACHINES. * * * * * JOH. KLEINEWEFERS SOHNE CALENDERS, MANGLES, PRINTING-, MERCERIZING-MACHINES, CONTINUOUS BLEACHING AND DYEING PLANTS. * * * * * * * * MONFORTS FINISHING MACHINERY, MAKING-UP MACHINERY FOR ALL KINDS OF CLOTH. * * * * * * * * * *

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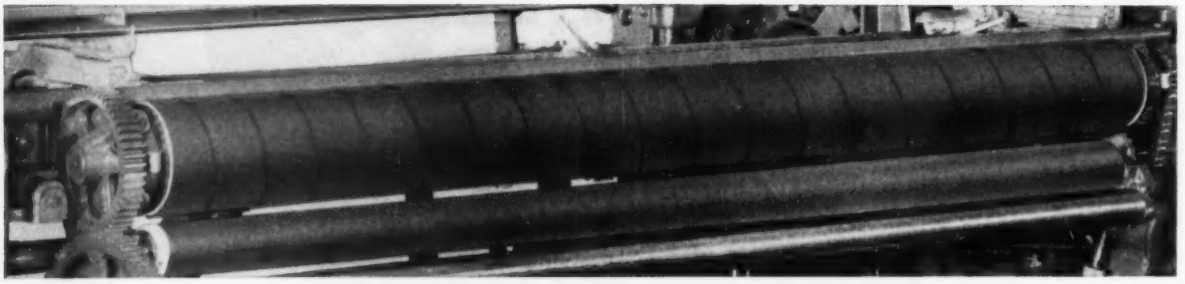
Technical Fair Hanover

26 APRIL - 5 MAY · HALL 7 A

This roll covering gives high take-up tension —yet won't mark fabrics



You get strong, steady take-up tension with Armstrong's NO-732 Roll Covering. Yet this cover is so smooth it won't mark even the most delicate voiles or marquisettes.

NO-732 is made of a special compound of synthetic rubber that develops amazing friction—up to twice the holding power you'd expect from rubber. A tough fabric backing adds extra strength to the long-wearing synthetic.

Next time you see your Armstrong man, ask him for a sample of NO-732. Then make this simple test. Rub the NO-732 against your shirt sleeve and see how it grips the cloth with only the slightest pressure.

Better still, call your Armstrong man for a sample right now or write Armstrong Cork Company, Textile Products Department, 5004 Arch Street, Lancaster, Pennsylvania. NO-732 comes in widths up to 4 inches, in roll lengths up to 150 feet. NO-732 and all other Armstrong Textile Products are available for export.

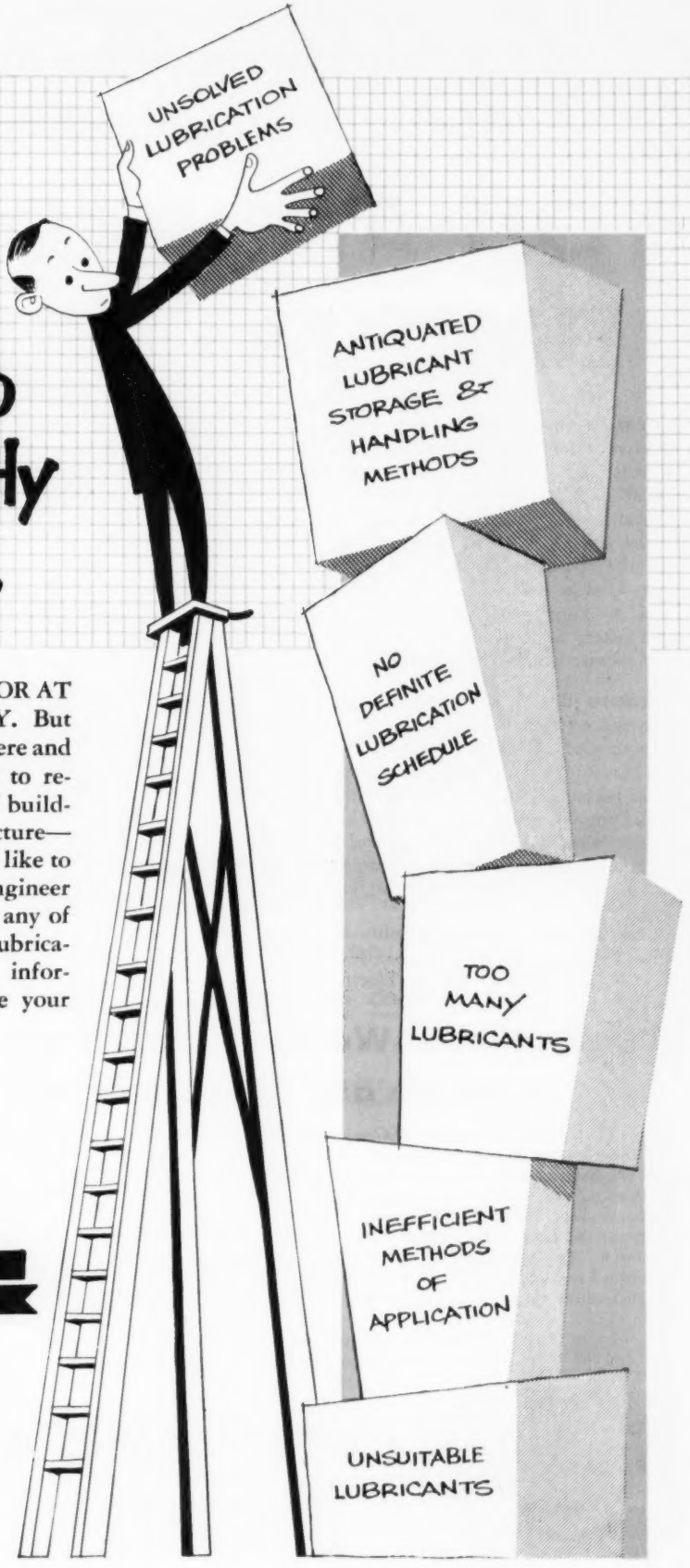
ARMSTRONG OFFERS A FULL LINE OF TAKE-UP ROLL COVERINGS

Whatever your preference, Armstrong can supply a wide choice of take-up roll coverings of synthetic rubber, cork and synthetic, plain or gridded cork.

ARMSTRONG'S TAKE-UP ROLL COVERS

Product of the Armstrong Cork Company, Textile Products Department, Lancaster, Penna.

Building up to a costly letdown...



OF COURSE YOU'RE NOT—OR AT LEAST NOT CONSCIOUSLY. But perhaps you are missing a bet here and there. The sketch is intended to remind you of the importance of building a sound lubrication structure—from the bottom up. We'd also like to remind you that a Gulf Sales Engineer can give you practical help on any of these individual phases of the lubrication problem. For additional information, write, wire, or phone your nearest Gulf office.

GULF OIL CORPORATION
GULF REFINING COMPANY
Pittsburgh 30, Pennsylvania

GULF SERVES INDUSTRY

When textile machine operations start and stop mechanically

YOU ARE PROBABLY LIMITING PROFITS

Because there's no profit gained from unproductive machine or man hours. Warner Electric Brakes and Clutches eliminate waste time and effort in starting or stopping machinery. They operate instantly, with the speed of electricity. There are no notches to engage . . . no clearances to take up . . . no solenoids or complicated linkages to slow operation. Fine-increment control is ideal for jogging and positioning—set-up is easier and faster. Effect—machines are more productive, and require less manual effort to operate.

Because there's no profit gained when shutdowns are required for maintenance and servicing of equipment. Warner Electric Brakes and Clutches are amazingly simple and never need adjustment. Wear take-up is automatic. Controlled torque and speed provide a smooth, cushioned application that reduces wear and tear on motors and other machine parts. Result—maintenance costs and machine down-time are reduced accordingly.

Because there's no profit gained using skilled labor for routine, repetitive tasks that can be done better automatically. Warner Electric Brakes and Clutches greatly expand the use of limit switches, relays and other control devices, simplifying push-button operation or automatic cycling. It takes only minor design changes and actually less equipment cost to build automaticity into your machinery. Benefit—increased productivity, less operator attention required, and precise, foolproof control over machine motions.

Because there's no profit gained from inferior quality or spoiled work. It's easy to control Warner Electric Brakes and Clutches precisely to meet the requirements of delicate textile operations. Rheostat adjustment gives you infinite flexibility—perfect torque and speed control to synchronize motions and build accurate timing into equipment. Shade marks, abrasion, breakage and other processing imperfections may be eliminated. Conclusion—quality of finished product is improved, and scrap reduced, too.

MORE FACTS about equipment modernization in the textile industry. Specific applications of Warner Electric Brakes and Clutches to textile machinery. Write for a copy, or contact your nearby Warner representative today.

Operation of Warner Electric Brakes and Clutches is simple and fast . . . infinitely flexible!

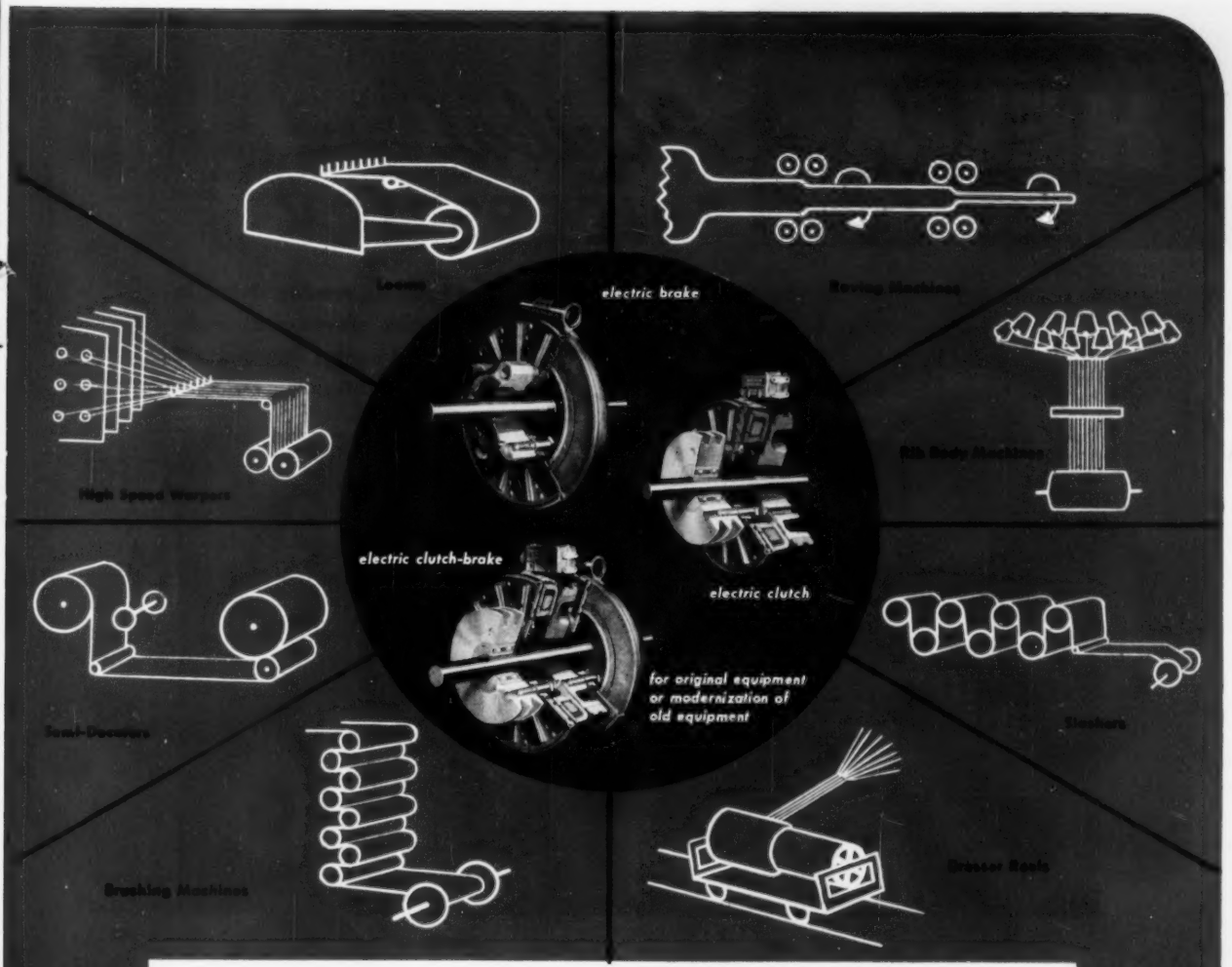
Warner Electric Brakes, Clutches and Clutch-Brakes give you new, unique simplicity of design and operation. There are only two main parts—an armature and magnet. Operation is by *electro-magnetic*, instantaneous engagement and release of friction surfaces. Torque ratings are extremely high for their small size and light weight. No coasting or slipping when "locked in." Easily designed into original equipment. Readily adapted to automatic cycles and remote control by limit switches, relays, electric eyes, pushbuttons, etc. Rate of application is accurately controlled to synchronize motions—give exact degree of speed and power required for your machine operation.

CONTROL ENGINEERING SERVICE . . . Warner offers complete application and control engineering service and field assistance. If you have a clutching, braking, tensioning, indexing, or speed-control problem, consult experienced Warner brake and clutch specialists for reliable recommendations on torque, heat, electrical controls, capacity, etc.

WARNER

ELECTRIC BRAKES & CLUTCHES

FOR INDUSTRIAL APPLICATIONS



Case histories of improved performance on machines equipped with Warner *electric motion control*

Loom—fast clutching accelerates shuttle, in a few inches, enough to travel 4 feet in a fraction of a second. Stops on late signal in 1/54 second.

Automatic Dying—quick, repetitive stops and starts save time. No coasting . . . no waiting before valve is opened or closed.

Card Machine—starts high inertia load of card cylinder quickly, easily.

Warper—stop-motion signal automatically brakes yarn warper traveling at 750-yards-per-minute within 1½ yards. Synchronized braking of several reels eliminates skidding.

Dresser Reel—stops 1000 to 3000 lb. reel, rotating at 50 r.p.m. speed, in less than half a revolution.

Brushing Machine—perfectly synchronized braking of eight brush rolls eliminates cloth abrasion.

Roving Frame—potentiometer control of Warner Electric Clutch permits variable time base acceleration characteristic at control of the machine operator.

Narrow Fabric Loom—instant, electric braking eliminates shade marks produced by coasting stop.

Tricot Knitting—over-excitation circuit produces ultra high speed braking and clutching . . . eliminates stop marks in fine-quality cloth.

Semi-Decater—perfectly synchronized braking of two drums eliminates slack—no more torn or broken leaders.

WARNER ELECTRIC BRAKE & CLUTCH COMPANY, BELOIT, WISCONSIN

HEIM *Unibal* SWEEPSTICK

The demand for the Heim Unibal Sweepstick has been growing steadily. Now, in its fourth year of production, repeat orders from mill owners, who have proven conclusively through actual performance records that this is a real money saver and a great improvement in smooth operation, indicate its true value.

The Heim Sweepstick incorporates such entirely new and revolutionary principles that one can't help but wonder how the old sweepstick, which gave such an uneven pick action and had a tendency to enlarge its stud hole through constant wear, could have remained unimproved for so long.

The body member is made of resilient, rubber-bonded fabric, but the unusual feature is the self-aligning Heim spherical bearing with a single ball (hardened, polished, bored, and lapped to fit the stud) which operates in a bronze ball race pressed into, and made an integral part of the body — much like a shoulder socket joint.

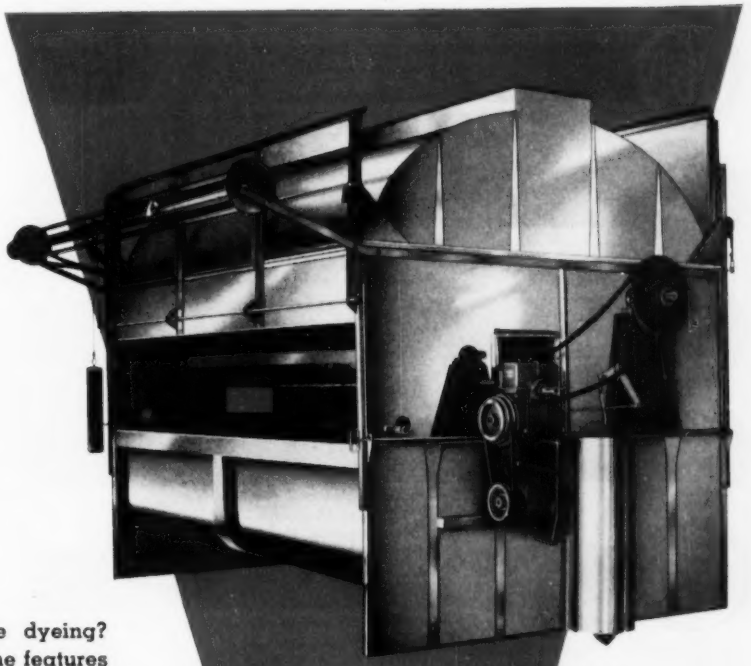
The cost is modest, and due to its longer, trouble-free life, it cuts "down time" and production losses to an economical minimum.

SWEEPSTICK DATA AND PRICES ON REQUEST

THE HEIM COMPANY

FAIRFIELD, CONNECTICUT

Engineered For Better Dyeing . . .



Stainless Steel

PIECE DYEING MACHINES by BURLINGTON

Interested in improving your piece dyeing? Then investigate the machine with all the features . . . as engineered by Burlington. Now proven in many finishing plants, this machine provides a smoother, more efficient dyeing process. The stainless steel construction is easy to clean . . . is rust, stain and chemical proof . . . wears longer than other materials, and is more economical. Burlington-built dye becks are available in either standard or special models in accordance with needs of the individual plant. Burlington Engineering Company, Inc., plant and offices, Graham, N. C. Telephone 6-4478, Burlington, N. C.

CALL OR WRITE US FOR FURTHER INFORMATION

BURLINGTON ENGINEERING CO., INC., GRAHAM, N. C.

COMBITEX

DUSSELDORF, GRAF-ADOLPH STR-78

COMBINE OF TEXTILE MACHINERY MANUFACTURERS — COMBITEX

A COMBINE OF TEXTILE MACHINERY MANUFACTURERS

J. Kruckels K. G. Zell
(Wiesental)

Hot Air Sizing Machines for cotton and worsted warps
Moist Air Sizing Machines for woollen and worsted yarns
Cylinder Sizing Machines for rayon and cotton warps

Jean Gusken G. m. b. H.
Dulken/Rhld.

High Capacity Weaving Looms for woollen and upholstery
Double Shuttle Looms for weaving velvets and plushes
Carpet Looms

Carl Zangs A.-G.
Krefeld

High Duty Weaving Looms for silk, rayon and the like,
Semi and Full Automatic Looms
Jacquard Machines • Card Cutting and Repeating Machines

S. Lentz
Viersen/Rhld.

Woollen and Worsted Loom
4 x 4 box (7 shuttles), up to 18 shafts

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Dyeing Apparatus and Machines
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Wool-Washing Plants

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High Effect Multiple Layer Tentering and Drying Machines
Feeding-Devices
Devices for needling-up

Friedrich Haas G.m.b.H.
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Drying Machinery • Chamber Dryers
Loop Dryers
Infrared Steam Agers

Franz Muller
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Napping Machine for woollen and cotton goods
Complete machinery for the cutting and finishing process for corduroy, velvets and velveteen

Dr. Ramisch & Co. G.m.b.H.
Krefeld

Calenders of all kinds for cotton, rayon, linen and jute
Special-calenders

Johannes Menschner • Rossweiner Maschinenfabrik A.-G.
Dulken/Rhld.

Doubling and rolling machines
Cloth inspecting machines
Selvedge printing machines

Benteler-Werke Bielfeld

Multi-Purpose Jigger with automatic reversing gear
Soaping • Boiling • Dyeing • Rinsing

Bringing you the products of important German TEXTILE MACHINERY SPECIALISTS

COMBITEX brings you from one source the advanced textile machines produced by eleven leading European manufacturers —machines that have proved efficient in textile mills the world over.

Continuous exchange of ideas and experience between member firms enables COMBITEX to supply single machines or complete textile plants of the highest technical standard both as regards efficiency and productive capacity. A joint office for handling the various matters arising from this association has been established.

MAWACO MACHINE CO.
A division of the Textile Machinery Import Company is fully equipped to service these machines and to maintain replacement parts in the U. S. A.

Your Inquiries are invited. Address

TEXTILE MACHINERY IMPORT CO.

277 North Avenue, New Rochelle, New York

For more information, write direct or use Reader Service post card.

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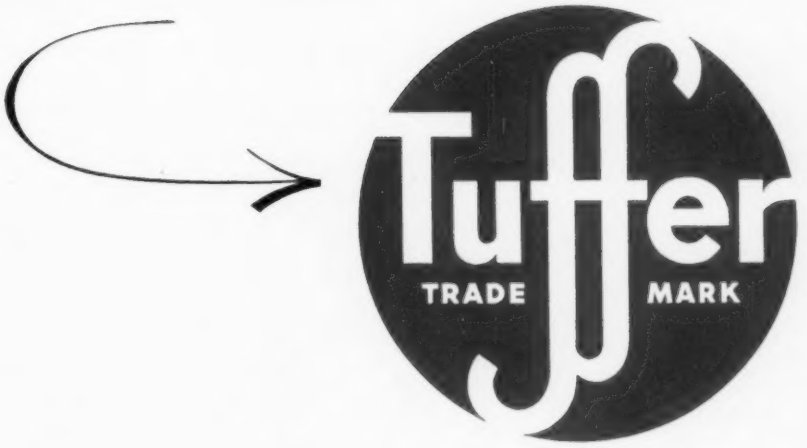


CARD CLOTHING

Good yarns largely depend on the quality of the stock to be carded. Good carding depends on quality Card Clothing.

Eighty-seven years ago soft iron wire and leather foundation were the two basic items used in Card Clothing manufacture. Today specialized hardened and tempered steel wire set with our Tufferizing Process in specially prepared foundations gives you the widest choice and unparalleled quality.

Yes, today Tuffer Card Clothing gives you that *better carding* you have a right to expect.

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

HOWARD BROS.

A-3

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.

Branch: Philadelphia, Pa. *Direct Representation in Canada*

For better Warp Sizing ...Finishing...Printing

OK BRAND

TEXTILE STARCHES

• Always uniform! • Tailor-made for your requirements! • Always dependable!

FREE TECHNICAL SERVICE!

Many expert textile men are members of the permanent technical staff of Hubinger's famous laboratories. You are invited to consult these experts on any production problem involving the use of starch—without cost or obligation on your part.

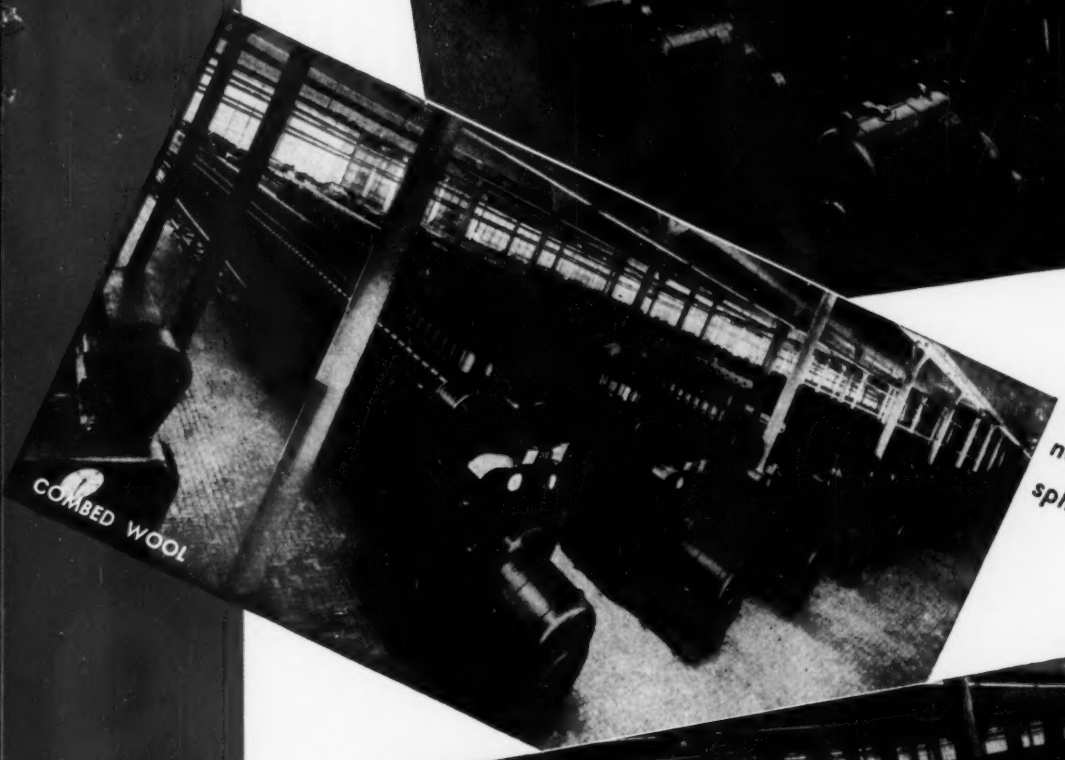
...the Stamp of Quality!

THE HUBINGER CO. (EST. 1881), KEOKUK, IOWA

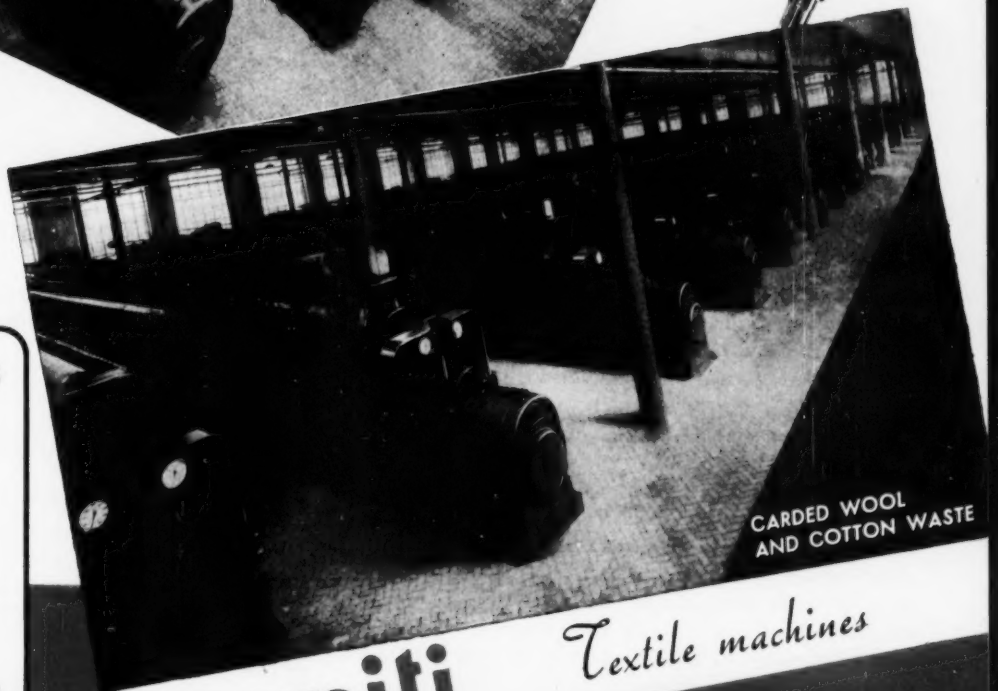
Branch offices: Boston • New York • Charlotte • Chicago • Los Angeles

For more information, write direct or use Reader Service post card.

30 years experience



roller
bearing
spindles
novibra
spheric



MACHINES
for
PREPARING,
SPINNING and
TWISTING of
COTTON,
COMBED WOOL,
CARDED WOOL and
COTTON WASTE

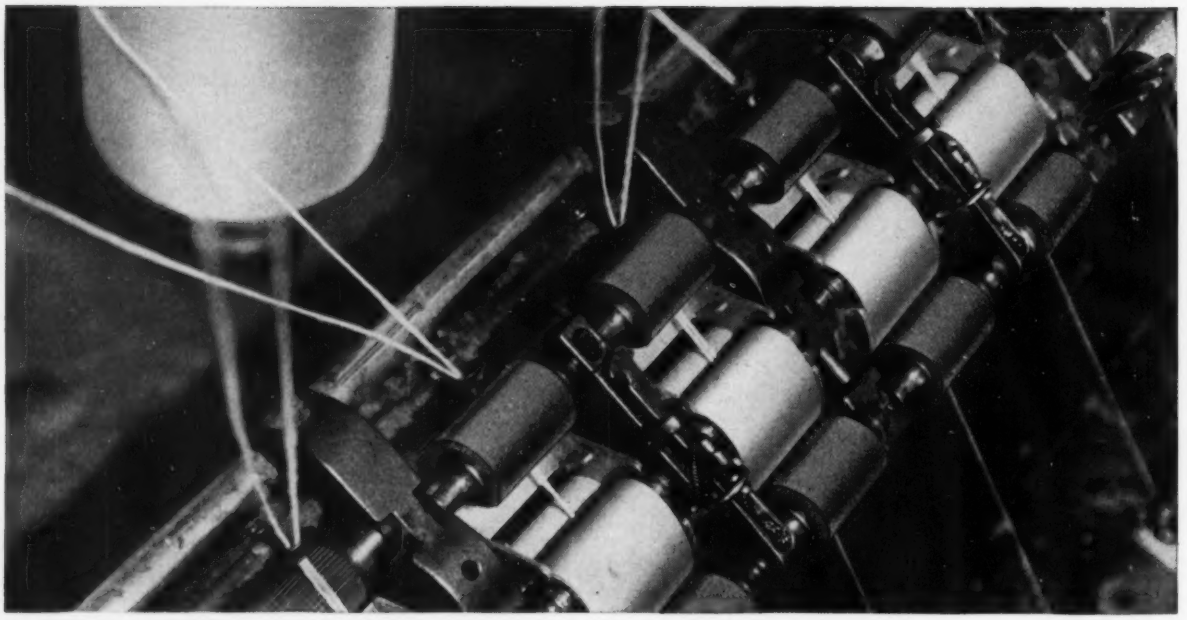
Carniti

Textile machines

A. Carniti & C. - Officine Fonderie Meccaniche Tessili Oggionesi S. p. A. - Oggiono (Como) Italia

Draft better yarn at lower

two famous



New Dayco Cot Containing Ibrocol Successfully Combats Eyebrowing

You can now reduce labor and cot costs in your spinning room and at the same time increase yarn quality. The new Dayco Cot, EW-465, makes this possible. Besides successfully combating eyebrowing, this new cot drafts better quality yarn, requires fewer cleanings of the clearer boards, and runs longer between buffings than any other cot.

This remarkable performance is the result of adding Ibrocol to the composition of the new cot. Its chemical and mechanical action gives the cot a surface that maintains just the right coefficient of friction to remove only the short staple fibers and transfer them well back under the clearer board. Long staple fibers that could build up into eyebrows are left in the yarn. Hence there is less waste as well as less eyebrowing.

And that's not all. The addition of Ibrocol retards slicking and glazing in the new Dayco Cot. Thus the surface retains its coefficient of friction longer, requiring fewer buffings. This means big savings in time and labor.

Dayco Cots contribute in many other ways too toward more efficient drafting. Get the complete story from your Dayco Representative.

Dayco Cots Do This For You—

- **Successfully combat eyebrowing**
- **Fewer lap-ups and ends-down**
- **Fewer buffings; longer between buffings**
- **Don't groove, pit, or develop flat spots**
- **Unaffected by moisture or temperature changes**
- **Fewer cleanings of the clearer boards**
- **Draft better quality yarn**
- **Lower overall cot costs**

cost with these DAYCO PRODUCTS

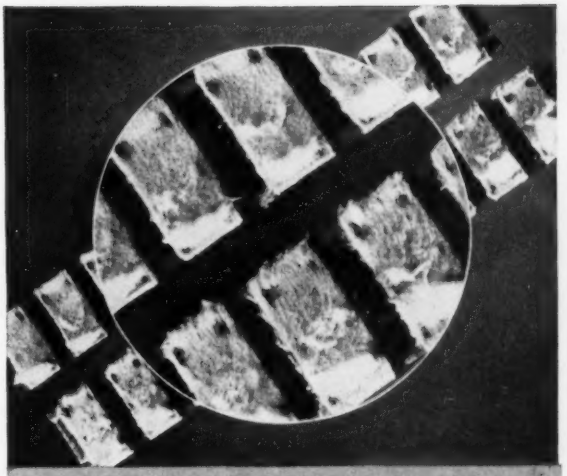
Uniformity of Dayco Long Draft Aprons Saves Time and Money; Ups Yarn Quality

Dayco Long Draft Aprons are manufactured under strict supervision to close tolerances. As a result, their drafting ability remains constant, enabling most mills to get up to 10% more uniform yarn.

They're built for round-the-clock day-in and day-out performance. A neutral axis of special Fortified Cord gives them great strength with just the right amount of stiffness to prevent compressing, wrinkling or distorting. Yet they are completely flexible for long life without cracking or breaking.

You'll find you can start off fast with Dayco Aprons, even after a week-end shutdown. Since Daycos don't stretch or take a permanent set, they start drafting the instant you start the frame.

Whether you use the single apron or two apron system, you'll find that Dayco equipped frames will save you time and money besides producing better quality yarn. See your Dayco Representative soon for the complete story.



Note the difference in waste on the two clearer boards. Top board was used with the new Dayco EW-465 Cot which removes only short staple fibers, packing them well back away from possible pickup by the end.

Whether you use the single apron or two apron system, Daycos can do the job expertly. They have just the right surface for carrying the roving without damage to the front line of cots.

Why It Pays to Equip With Dayco Long Draft Aprons

- Get more uniform yarn
- Fast, positive morning starts
- No moisture or temperature troubles
- Not damaged by hard ends
- Won't crack, curl, or pick up lint
- Drafting ability stays constant
- Lower costs

Dayton Rubber

Since 1905

©D. R. 1953

Textile Products for Better Spinning and Weaving

Dayton Rubber Company, Textile Division, Woodside Bldg., Greenville, S. C.

what's **corn** doing at the north pole?

CORN PERFORMS VITAL FUNCTIONS... IN MANY UNEXPECTED PLACES

Wherever modern man goes... corn follows him in one form or another. Corn is with him in his food in many forms, including corn syrup, starches and energy-giving dextrose. Corn sugars helped tan the leather in part of his clothing. Specialized corn starches helped cast the molds for much of his metal equipment. These are but a few of the numerous examples of how continuous basic research in corn helps a host of industries... helps you.

CORN PRODUCTS IN TEXTILES

For the textile industry Corn Products Refining Company supplies a variety of specialized starches, gums and dextrins... recommended ingredients for many textile processes.

We offer quality in volume supply unexcelled in the field. Complete technical service is available without cost or obligation. If you have a production problem why not check with Corn Products. We welcome your specific technical inquiries.

Manufacturers of
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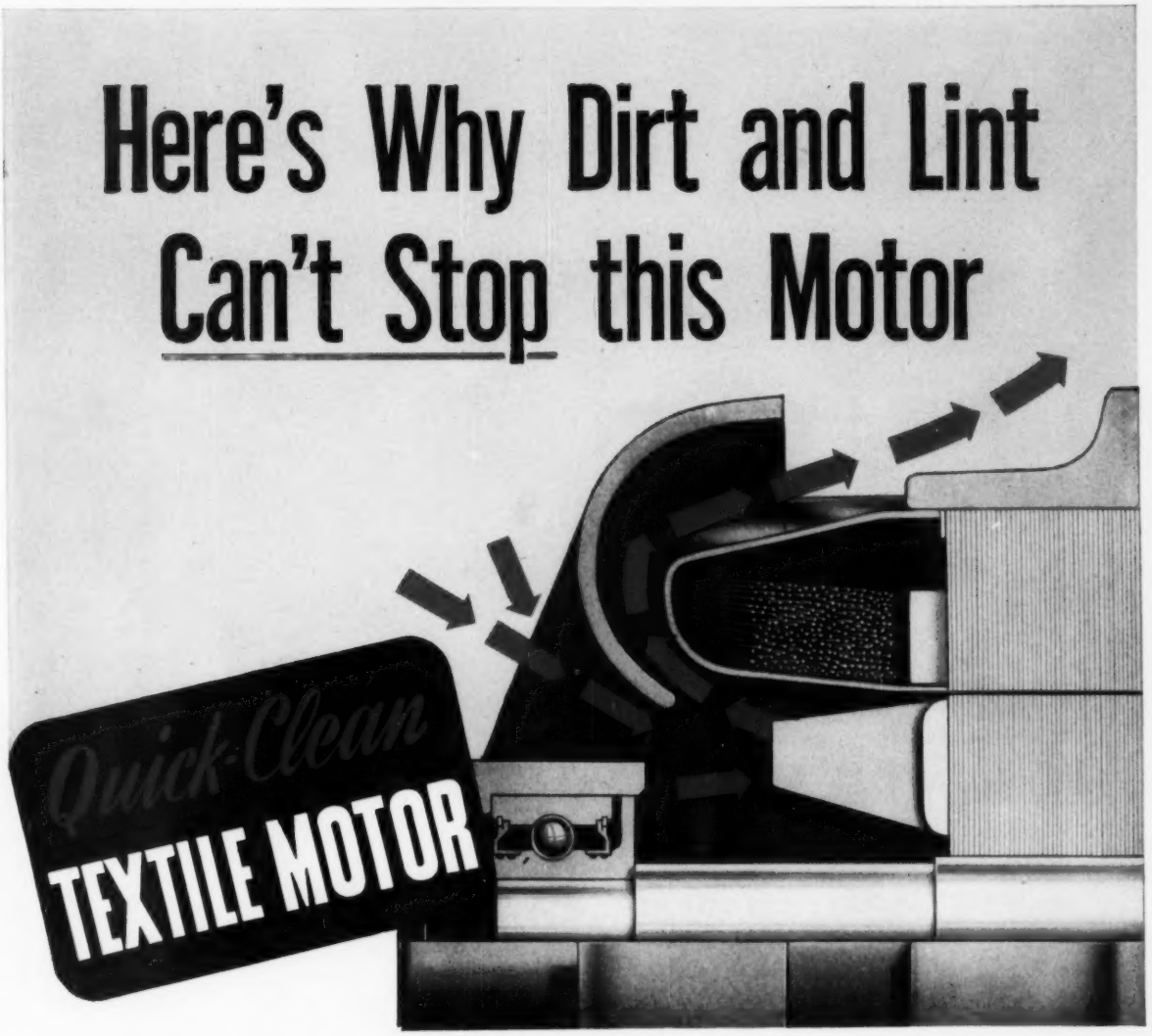
brand dextrins, gums
GLOBE®
brand starch
EAGLE®
brand corn starch

CORN PRODUCTS REFINING COMPANY, 17 Battery Place, New York 4, N. Y.

Here's Why Dirt and Lint Can't Stop this Motor



Wide Open Design Allows Powerful Fans To Sweep Lint And Dirt Right Out Of Quick-Clean Motor!

YOU HAVE NO MOTOR PROBLEM from lint-laden atmospheres when you use *Quick-Clean* textile motors. *Quick-Clean* motors have wide open passages for cooling air and powerful fans to sweep lint and dirt right out of the motor. Inside surfaces are smooth and hard so lint cannot lodge anywhere. Air passages are shaped for smooth air flow.

Quick-Clean motors also save you money with sealed bearings which eliminate usual expensive bearing maintenance procedures. Grease or oil cannot leak from the bearings to soil materials or gather lint and dirt. Lint and dirt cannot enter the bearing. Ask your nearest Allis-Chalmers Sales Office about the *Quick-Clean* textile motor. Or write for Bulletin 51B6055. Allis-Chalmers, Milwaukee 1, Wis.

A-3970

Quick-Clean, Texrope and Vari-Pitch are Allis-Chalmers trademarks.

Sold . . .
Applied . . .
Serviced . . .

by Allis-Chalmers Authorized Dealers, Certified Service Shops and Sales Offices throughout the country.

CONTROL — Manual, magnetic and combination starters; push button stations and components for complete control systems.

TEXROPE V-belts in all sizes and sections, standard and *Vari-Pitch* sheaves, speed changers.

PUMPS — Integral motor and coupled types from ¾ in. to 72 in. discharge and up.

ALLIS-CHALMERS

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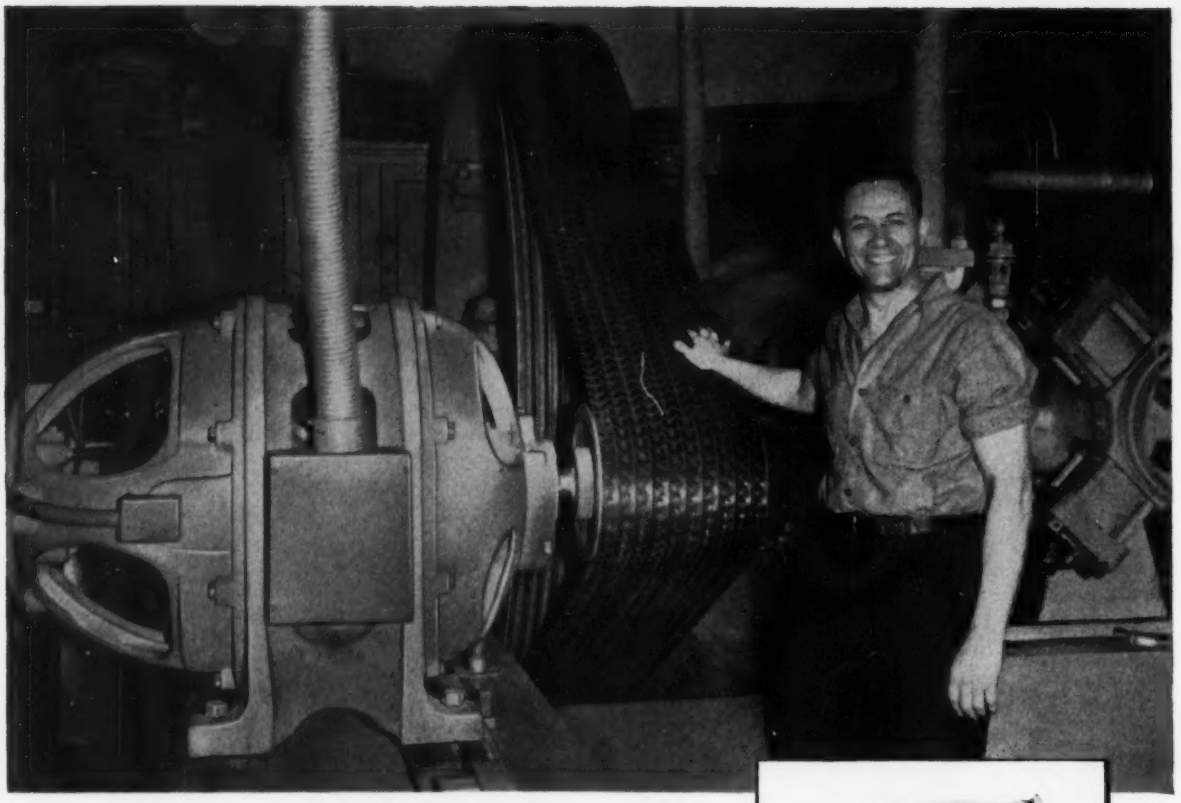

with Veelos on your machines...

v-belt replacement takes up to 90% less time

Actual in-plant records prove that Veelos v-belt can be installed *and operating* in up to 1/10th the time regularly needed to do the same job using endless v-belts.

Matched sets of Veelos are quickly made up in your own stockroom or at the machine by just coupling the correct lengths for the particular drive. Even outboard bearing drives are no problem. You *never* remove these outboard bearings, because Veelos is installed by simply coupling it around the shafts and running it onto the sheaves. And maintaining adequate stocks of Veelos is practically automatic. A quick check of the Veelos 100-foot reel will tell the inventory story.

For full vibrationless power delivery, for fast adjustability to keep sets matched, for ease of controlling inventory and for quick, simplified replacement — standardize on Veelos.

Have you seen this Veelos Facts Book?

Your Veelos v-belt distributor's salesman will be glad to give you a quick trip through this fact-packed, 36 page book. You'll find it well worth the few minutes it takes. Next time the salesman calls, ask him to show it to you.

VEELOS
THE LINK
V-BELT

Write for a copy of the VEELOS DATA BOOK. It's fully illustrated and packed with useful engineering data. We'll be glad to send a copy along and you'll be glad to have it!

MANHEIM MANUFACTURING AND BELTING COMPANY
611 Manbel St., Manheim, Pa.

ADJUSTABLE TO ANY LENGTH • ADAPTABLE TO ANY DRIVE

and now
a companion to Spectrolene

Spectrosol

trademark

a naphthol and stabilized diazo combination

mixed fresh

at

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Spectrosol

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- Economical

THE HILTON-DAVIS CHEMICAL CO. DIV.

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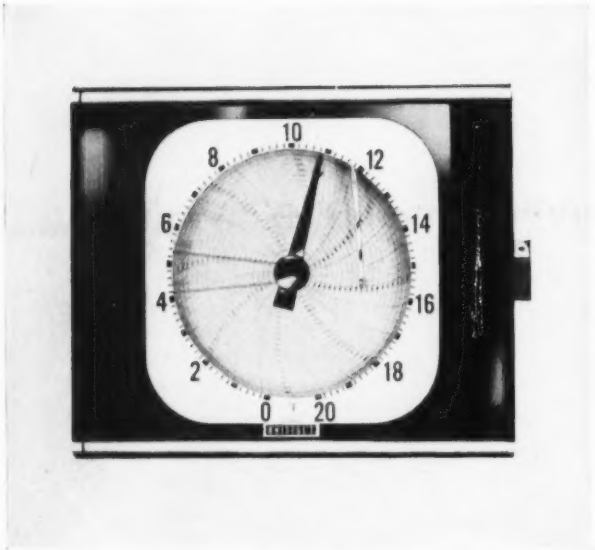
Manufacturers of Dyestuffs for the Textile Industry

BRISTOL ELECTRONIC
DYNAMASTER POTENTIOMETERS
feature Continuous Standardization!



BRISTOL DYNAMASTER with round (above) and strip (right) charts feature identical components and units, except for the chart drive.

advantage 1:

No dry cells to fuss with . . .

thanks to Bristol's constant voltage source, which is continuously compared with the voltage of a standard cell.

advantage 2:

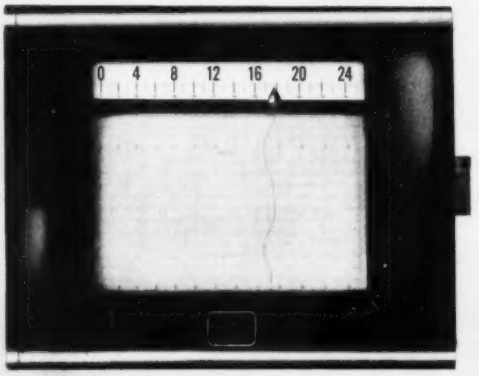
Continuous operation . . .

no interruptions for standardization.

advantage 3:

No standardizing mechanism

No wonder the Dynamaster is the finest-performing potentiometer on the market!



Bristol Electronic Dynamaster Potentiometers for every use!

Recorders—single and multiple records and two continuous ink records;

Electric Controllers — on-off and all types of proportioning control;

Air-Operated Controllers—on-off, proportional (0 to 30% and 0 to 100%), reset, derivative, and reset plus derivative control actions.

Write for free Catalog P1245 to The Bristol Company, 103 Bristol Road, Waterbury 20, Conn.

BRISTOL

The dependable Guidepost of Industry

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

the ring's the thing that

KEEPS DIRT OUT

Here's why SKF Triple-Seal "SAF" Pillow Blocks are your solution:

- SKF Triple-Seal "SAF" Pillow Blocks are easy to install and inspect.
- The Triple-Seal rotating rings provide effective sealing from dirt; retains any kind of lubricant.
- The bearings are self-aligning.
- Available with ball bearings or spherical roller bearings, free or held . . . for either adapter mounting or direct mounting of bearing on shaft.

When you have a bearing replacement to make, call your SKF Distributor. He'll show you *why* you will minimize bearing trouble with SKF Triple-Seal "SAF" Pillow Blocks. Remember—your SKF Distributor is a bearing *specialist.*

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.,— *manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.*

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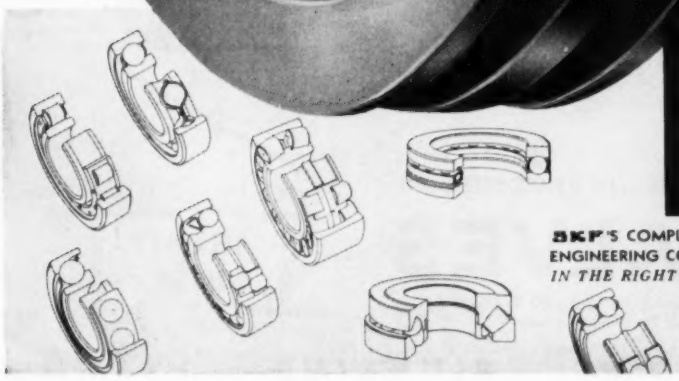


SKF®

BALL AND ROLLER BEARINGS

SKF'S COMPLETE LINE OF ANTI-FRICTION BEARINGS, PLUS SKF ENGINEERING CO-OPERATION, HELPS YOU PUT *THE RIGHT BEARING IN THE RIGHT PLACE.*

HIGHLY RECOMMENDED

for low cost service

CRANE

IRON BODY—WEDGE DISC

Clamp Gate Valves

Crane Wedge Disc Clamp Gate Valves come in OS&Y, inside screw, and quick-opening patterns, all-iron or brass trimmed, screwed or flanged end. Sizes up to 4 in. Working pressures up to 150 p.s.i. saturated steam, 225 p.s.i. cold service.

Low in first cost, as well as in upkeep . . . and look at their wide utility—

Use Crane Clamp Gate Valves for steam; hot and cold water; crude, fuel, and lubricating oil; air, gas, and gasoline service.

Also in food and chemical process industries for caustic solutions, alkalies, corrosive chemicals, and gases.

You'll find Crane Clamp Gate Valves extra rugged, with a strong reinforced body and husky stem. Their compact design means a better fit for more places . . . a saving on piping in many cases. And because of the simplified clamp construction, these valves enjoy wide favor where frequent cleanout is essential. The bonnet assembly and wedge disc lift out easily—the body stays in the line. Reassembling is no problem—the bonnet joint makes up tight and stays tight.

Wide choice of regular patterns, all-iron or brass trimmed. On inside screw all-iron valves, an improved self-draining bonnet prevents entrapment of line fluids in the bonnet—protects the threads, keeps the stem working smoothly. Send for Folder AD 1667 or ask your Crane Representative for full details.

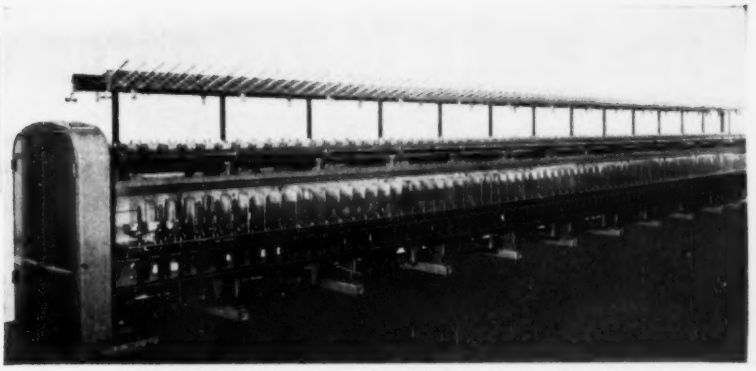
THE BETTER QUALITY . . . BIGGER VALUE LINE . . . IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

For more information, write direct or use Reader Service post card.



The Whitin "C6" Twister . . . Fafnir Ball Bearing equipped, on gear mountings, tension pulleys, spindles, and lifting rod rollers.

PARTNERS in PROGRESS

Whitin (30 YEARS) ...FAFNIR

The Whitin "C6" Twister, one of the latest and most advanced machines in the Whitin line, reflects a greatly accelerated development program in textile machinery manufacturing. Designed for use by producers and processors of viscose rayon, acetate and other synthetic yarns, the "C6" offers many unusual features including the wide application of anti-friction bearings. In the head end, a combination of metal and laminated bakelite gears mounted on studs running on anti-friction bearings provides exceptionally quiet operation at extremely high speeds. This is an achievement of Whitin Designers and Fafnir Ball Bearing Specialists working side by side.

For over 30 years, Fafnir has been a Whitin supplier . . . providing ball bearings for original equipment and replacement. Good bearings aren't the sole answer to this relationship. Equally important is the Fafnir "attitude and aptitude" . . . a way of looking at bearing problems from the designer's viewpoint, an aptitude for supplying the precise bearings to fit the need. Maybe this combination can help you. The Fafnir Bearing Company, New Britain, Conn.

Fafnir Ball Bearing "Economy" Packages

Sealed & Shielded Radial Type Bearings
. . . with various arrangements of seals and shields.

Power Transmission Units
. . . featuring the Fafnir Wide Inner Ring Bearing with Self-Locking Collar

Special Textile Units
for practically every textile machinery application.

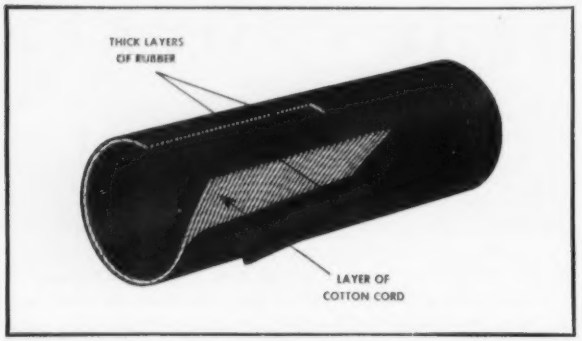
FAFNIR BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

You make fewer apron changes with these aprons on your frames

On most frames, Armstrong's Accotex® Aprons will give 6 to 8 years of continuous, three-shift service. In fact, several mills report these aprons have given more than 8 years of trouble-free spinning.

The answer to this kind of performance is found in their patented three-layer construction (below). It produces a durable, seamless, and flexible apron with excellent yarn control qualities.



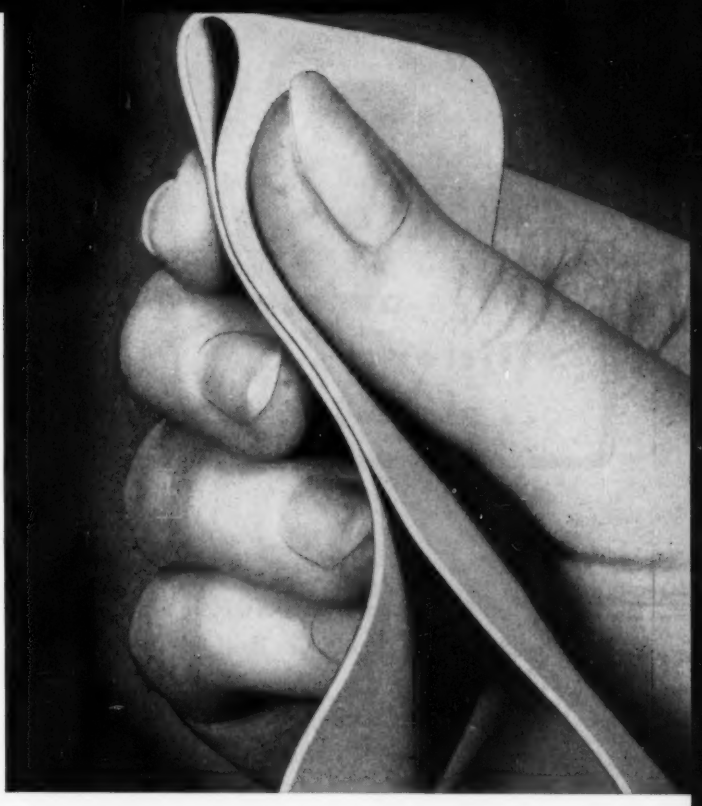
The outer layer of each Accotex Apron is made of a synthetic rubber, specially compounded for toughness. The surface is given a smooth finish, then treated to stay smooth for years.

Sturdy cotton cords form the middle layer. These cords prevent stretching and curled edges. The inner layer, which must take the abrasion of millions of trips over the nose bar, is also made of a very durable, long-wearing synthetic rubber.

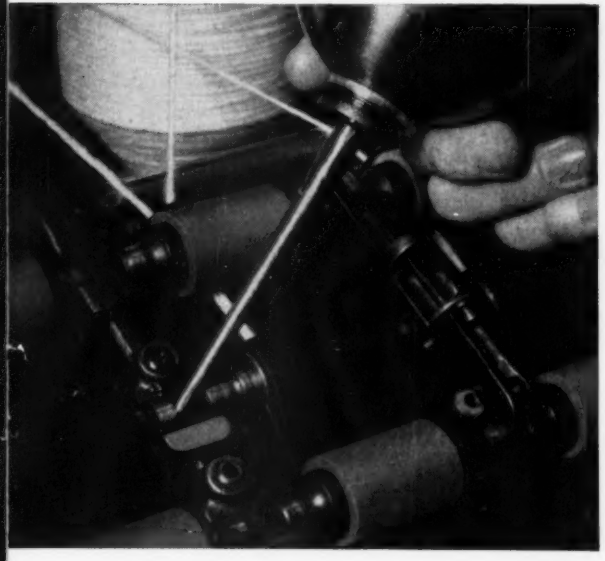
Vulcanized together, the three layers form a one-piece apron without a seam or weak spot.

It's easy to arrange for testing Accotex Aprons on your own frames. Just call your Armstrong man or write Armstrong Cork Company, Textile Products Dept., 8304 Arch St., Lancaster, Pa. All Armstrong textile products are available for export.

SEAMLESS: Mill after mill has discovered that this smooth, continuous surface means even drafting, with fewer irregularities in the yarn.



SUPER FLEXIBLE: NO-750 Accotex Apron is seamless and extremely flexible. It hugs the nose bar tightly, giving a smooth slip-roll action.



OIL RESISTANT: Accotex Aprons don't absorb oil or soften from exposure to oils, dyes, and commonly used textile solvents. They run clean.

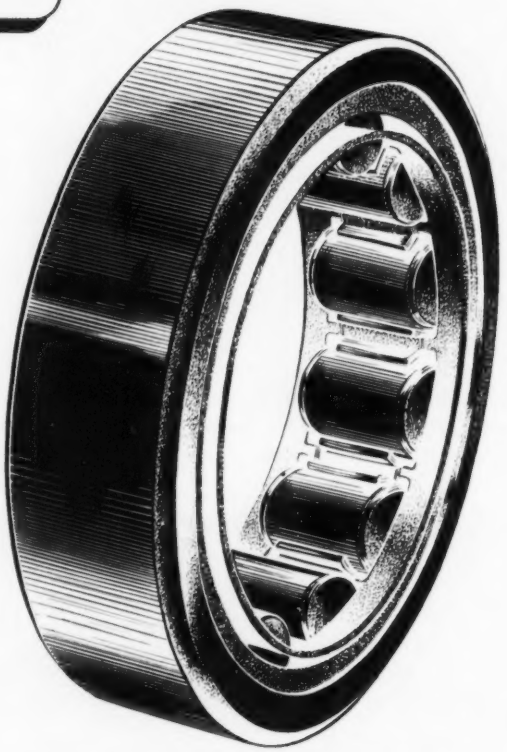
SMOOTH FINISH: Each Accotex Apron is given a patented treatment that makes the surface satin smooth, clean running, and scuff resistant.

ARMSTRONG'S ACCOTEX APRONS

one of Armstrong's complete line of textile mill supplies

ROLLWAY Tru-Rol STEEL-CAGE BEARINGS

Above-average efficiency . . .
. . at no increase in cost



Normally you'd expect to pay a premium for the precision found in Rollway's TRU-ROL. Not so, however. These long-life steel-cage bearings are competitively priced. Their exceptional performance and low cost are the result of three distinctive Rollway advantages:

FIRST Advanced metallurgical facilities and mass production by modern, high-speed, high-precision machinery.

SECOND Experience since 1908—during good times and bad—in the practical application of cost-cutting methods.

THIRD Tru-Rol's contoured guide lips which insure constant roller alignment and extended life. They prevent undue wear caused by skew, slide and end-rub . . . encourage cooler operation by spreading a thin film of lubricant evenly over the rollers.

Our complete engineering and metallurgical services will gladly work with you on your problems. Simply write or wire any sales office. No cost. No obligation.

Rollway Bearing replacements are available through authorized bearing distributors in principal cities. Consult your classified 'phone directory.

ROLLWAY BEARING CO., INC.
SYRACUSE 4, N. Y.

ROLLWAY BEARINGS

Complete Line of Radial and Thrust Cylindrical Roller Bearings

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LOOK HOW LOTOL

Performs carpet magic!

Cotton Rug by THE Magee Carpet Company, in 15 beautiful colors.

Here's an achievement cotton carpet manufacturers everywhere will be glad to hear about. It means finer quality carpets *at no greater cost!*

"LOTOL"® is the magic compound — an amazing new latex from the laboratories of Naugatuck Chemical. Especially developed for cotton rug backing, it's now being used by Magee*. And look at the advantages it brings.

Locks pile for life! New LOTOL anchors the face yarn to the carpet backing *flexibly, permanently.*

Improves carpet properties! This remarkable new compound gives carpets finer "hand" or body, more resilience, greater weight, better feel, and good tacking strength. What's more, it prevents raveling, wrinkling, and slipping.

Impervious to the strongest dyes! Even 8 hours in boiling dye won't harm this backing. There's no discoloration or breakdown!

And the luxurious, odor-free carpets can be cleaned *time and time again* without danger of shrinking!

Wonder-working LOTOL compound, now available to the industry — is just one more reason why Naugatuck Chemical is first in latices — a reliable source of the finest basic materials for the finest finished products.

For more information on Lotol and the profitable possibilities it offers you for coating, bonding, or finishing products of all kinds, send the coupon below today.

*THE Magee Carpet Company,
295 Fifth Avenue, New York 16, N. Y.

Naugatuck Chemical

Division of United States Rubber Company

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Naugatuck Chemical, 324 Elm Street, Naugatuck, Conn.

Please send further technical data on Lotol to:

Name .....

Title .....

Company .....

Address .....

City ..... Zone ..... State .....

Research... cornerstone of advanced instrumentation

RESEARCH is a job that never ends. This holds particularly true in the field of instrumentation, for every advance in manufacturing procedures brings a demand for better techniques for measurement and control.

But research, to fulfill its true function, must do more than keep pace with progress. In Honeywell's Industrial Division, research points far beyond today's frontiers. Here, skilled scientists are intensively engaged in programs that are developing solutions not only for present problems, but also for the much more demanding applications of the future. Drawing on the related sciences of physics, electronics, metallurgy, chemistry and nucleonics, they are helping to bring instrumentation into its own as a new and essential science. Fundamental research, which attacks control problems in their most basic aspects, is supplemented by development studies to evolve practical equipment for factory use. Working in close cooperation with research, Honeywell application engineers translate new developments into working systems, custom-fitted to today's process requirements.

Covers all phases of control

Each of Honeywell's several laboratories works in specialized but related phases of instrumentation.

The primary elements laboratory, for example, searches into ways to improve the performance of today's elements—and to utilize the latest scientific discoveries in producing new detecting devices with greater range, speed, flexibility and accuracy.

In the precision measurement laboratory, Honeywell's own "Bureau of Standards" performs the most exacting electrical and mechanical measurements to provide precise evaluation of new developments.

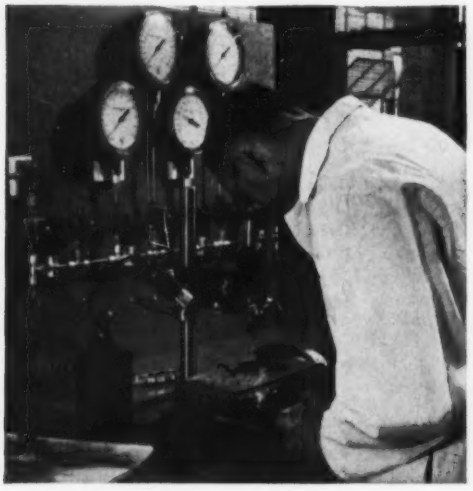
The nuclear engineering laboratory develops specialized techniques of measurement and control essential to the nation's accelerated atomic energy program.

The servomechanisms laboratory studies the techniques which will be needed to control the "automatic factory" of the future . . . operates processes in miniature, and analyzes their control performance.

What of tomorrow?

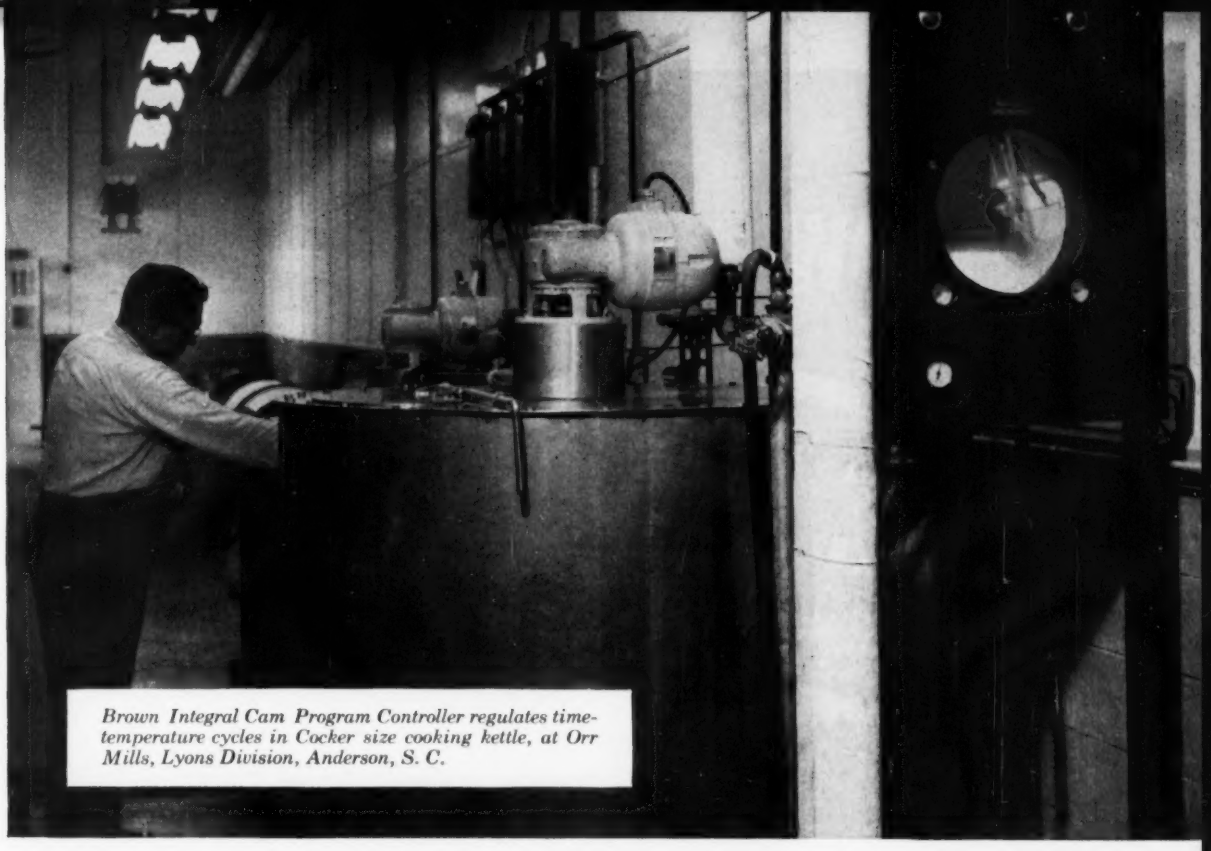
To the instrument user—in factory or laboratory—Honeywell's research has twofold significance. It assures continued refinement of instrumentation for the measurement and control work that's to be done today. And it promises new and revolutionary equipment from Honeywell . . . "First in Controls" . . . for the increasingly important role that instrumentation will play in tomorrow's world.

Space-saving,
for kettle



PRECISION MEASUREMENTS *aid study of new pressure measuring elements.*

NEW CONTROL TECHNIQUES *are developed in the servomechanisms laboratory.*



Brown Integral Cam Program Controller regulates time-temperature cycles in Cocker size cooking kettle, at Orr Mills, Lyons Division, Anderson, S. C.

cost-cutting control *time-temperature programs*

THE Brown Integral Cam Programmer sets new standards for compactness and flexibility of time-pattern control for dyeing and size cooking kettles. This single instrument now does the work that formerly required two to four separate units!

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Either electric or pneumatic control can be provided. The controller can operate signals at critical points in the cycle, and will automatically shut off the kettles at the end of the program.

Cams are readily cut to the desired contour on calibrated discs of clear plastic, through which the process record is readily visible at all times. Changing cams or chart does not interrupt control.

Our local engineering representative will gladly discuss how you can get better control in less space and at lower cost with this versatile instrument. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa.

● **REFERENCE DATA: Write for Catalog 6020, "Cam Programmer Thermometers."**

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BROWN INSTRUMENTS
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makes fabric styling easier...
mill operation more efficient

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Boston 10, Mass.	140 Federal Street, Room 1602
Camden, N.J.	300 Broadway
Charlotte 2, N.C.	1603 Liberty Life Building

Celanese Corporation of America, 180 Madison Avenue, New York 16, N.Y.

Celaperm—the new and better Celanese* solution-dyed yarn—comes in a range of colors with an all-around fastness unexcelled . . . together with all the other qualities inherent in acetate. And with Celaperm you have this assurance: no matter how large the order you place at one time, you enjoy color fidelity throughout the lot.

Celaperm also offers many other mill efficiencies and styling opportunities. Specifically, to name a few:

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Many interesting patterns can be achieved with color fastness by combining Celaperm with black or white yarns, at the same time completely by-passing otherwise difficult dyeing operations. Since Celaperm is available on section beams a very efficient production schedule is possible.

THREE-COLOR EFFECTS

Celaperm can be combined, particularly as decoration, with two other fibers, that can be cross-dyed, achieving a new three-color effect.

Furthermore—and of far-reaching importance—it is possible with Celaperm to develop loom-finished fabrics. Celanese is ready to work with you to explore this new era in fabric.

Celanese* CELAPERM*

THE PERFECTED COLOR-PIGMENTED ACETATE YARN

*Reg. U. S. Pat. Off.

New Westinghouse "packaged-type" slasher drives cut installation and operating expense

Westinghouse pioneered in the development of multi-motor slasher drives. Over 250 of our drives are now in service . . . far more than all other makes combined. These drives have been tested and proved in operation. We've learned from this experience how to build drives that will do a better job for your mill. Now Westinghouse offers packaged-type slasher drives which will save even more on installation cost and operation expense.

Installation is easy and inexpensive—All power supply and control equipment is mounted in a single, factory-wired, pre-tested, compact cabinet. This factory wiring greatly reduces installation expense and makes it simple for your own men to expertly install the unit. Too, the compactness of the drive makes it possible to fit the unit into valuable mill space; simplifies servicing of the equipment.

Few stoppages, increased production—These new drives let your slashers run safely at any speed within the capacity of your dryers. Yet because they hold tension constant, you practically eliminate stoppages due to broken ends. Also, this constant tension eliminates soft beams. As a result there are fewer broken ends on your looms . . . fewer loom stops.

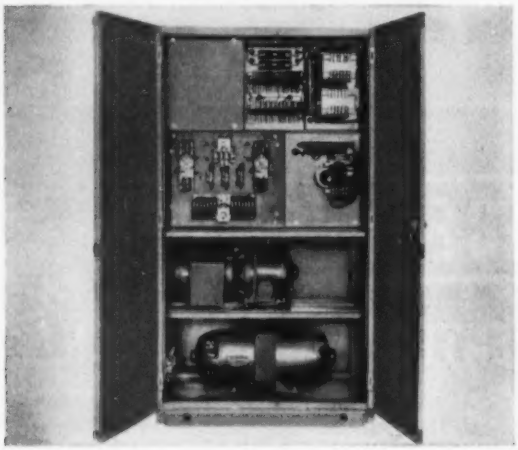
Handling costs go down—As much as 20% more warp can be wound on the beam because tension is held constant. This means fewer beam changes and fewer loom interruptions for starting new beams. You benefit by a substantial saving in handling costs.

No bearing lubrication—The M-G set, booster set and all drive motors are equipped with pre-lubricated, sealed bearings. Grease can't get out and dirt can't get in. Bearing lubrication is completely eliminated.

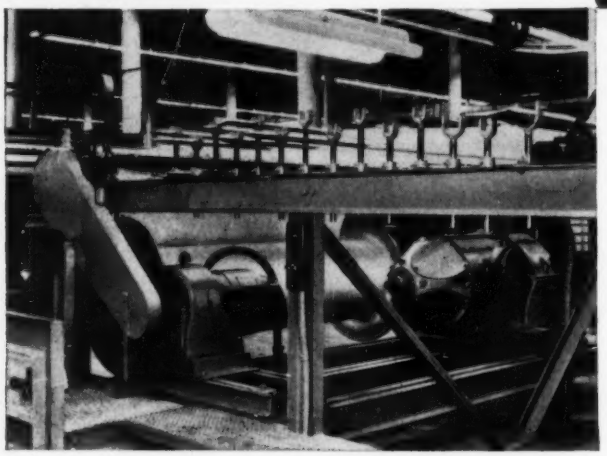
No moving parts in exciter or regulator—The new packaged-type drive uses a static selenium-type rectifier to excite the d-c generator and drive motors. A magnetic amplifier regulates the beam motor to provide constant tension. Both the exciter and regulator have no moving parts and require no maintenance. J-94983

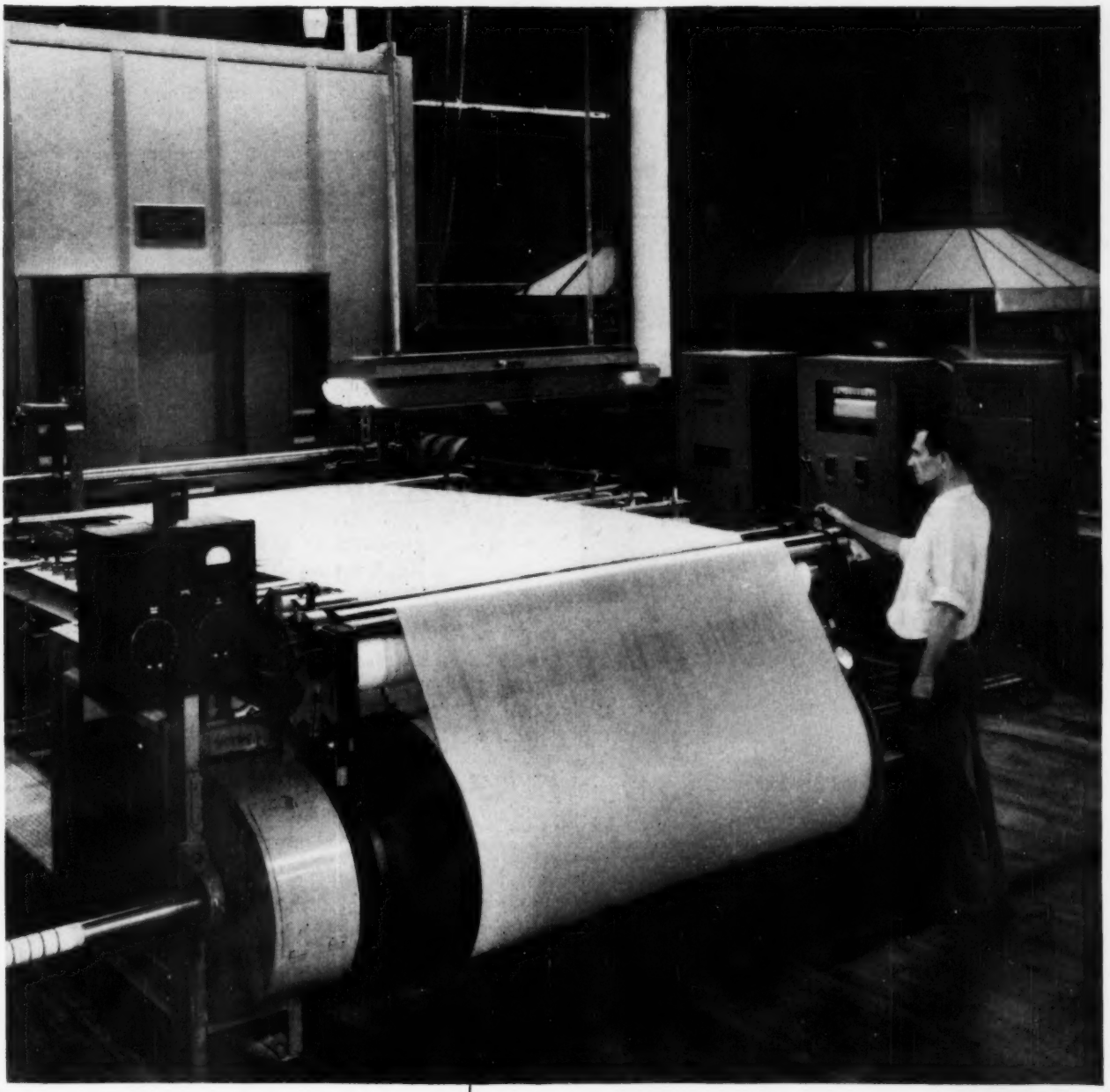
YOU CAN BE **SURE**... IF IT'S
Westinghouse

The new Westinghouse Packaged-Type Slasher Drive greatly reduces your installation expense. All power supply and control equipment is mounted in this single, factory-wired, pretested, compact cabinet.



The Westinghouse Gearmotor, at left, drives the delivery roll; the gearmotor at right, the beam. Co-ordinating the motor and speed reducer in one unit results in easier installation and reduces maintenance.





FIND OUT MORE ABOUT HOW YOU CAN REDUCE SLASHING COSTS

Mail the coupon to find out more about how Westinghouse Packaged-Type Slasher Drives will improve your operations. And when you're planning any expansion or modernization, be sure to call Westinghouse early.

Westinghouse Electric Corporation
P. O. Box 868
Pittsburgh 30, Pennsylvania

Please send my free copy of *Westinghouse New Packaged-Type Multi-Motor Slasher Drives*, B-5616.

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Wherever Bearing Performance and Cost are Important

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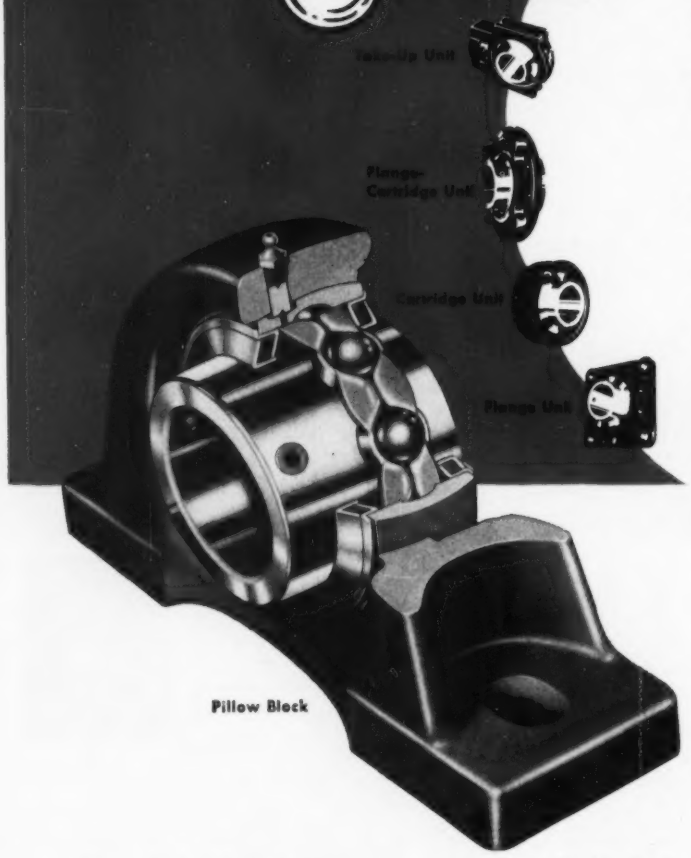
BALL BEARING UNITS



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To the thoughtful engineer or operating executive, *each* of these SEALMASTER features is a convincing reason for choosing SEALMASTER Ball Bearing Units. *Together*, this exclusive combination of basic advantages offers sound assurance of top performance *under all conditions*. Write now for your copy of Catalog 845—complete data on the broad SEALMASTER line.

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For the trend to blends and lighter woolens . . . use SYTON

(Depth of Shading Indicates Syton's Increasing Effectiveness)

WHERE CAN SYTON HELP YOU MOST?	Wool Grade	Average Minimum Count Commonly Spun	Average Maximum Count Commonly Spun
	80s	52	70
	70s	48	60
	64s	40	50
	60s	30	44
	58s	28	40
	56s	20	36
	50s	18	32
	48s	18	28
	46s	18	26
	44s	16	24
	40s	15	20
	36s	6	16

(Wool-synthetic blends show similar pattern of Syton's effectiveness)

It seems certain that wool-synthetic blends will be even more popular this spring and summer . . . that clear-finished worsteds and lighter woolens should go over big next fall.

If you are spinning yarns for *any* of these fabrics, it will be worth your while to find out how Syton can increase the efficiency and economy of your spinning operation.

The chart above shows where Syton can be used most effectively in all-wool spinning. Since Syton increases inter-fiber friction, it is especially suited to wool-synthetic processing. (Syton causes the smooth synthetic staple to behave more like a serrated wool fiber.)

Whatever your wool grade, Syton enables you to spin more efficiently to lighter, finer counts, making a variety of new constructions possible. Syton also helps you produce more uniform, condensed rovings and stronger yarns with less twist. This all leads to such additional improvements as: less fly and waste, fewer ends down, faster machine speeds.

A new booklet, "Profitable Spinning of Wool and Wool Blends with Syton," describes in detail how Syton may be applied on the Woolen, Bradford, French and modified systems. Ask for a copy today if you would like to learn how typical mills have used Syton to improve their processing. MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass.

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He's a great basketball player—BUT

How does he compare with Paul Arizin?

Paul Arizin of The Philadelphia Warriors won the NBA scoring championship in the 1951-52 season with 1,674 points. His game average of 25.4 points topped the league. Arizin was voted the Sam Davis trophy as professional basketball's "Player of the Year" in 1952.

In everything we do, we make comparisons . . . In Full-Fashioned Knitting, the one standard of comparison is the 30-section "Reading" Machine with a production of 14 to 16 dozen pairs of superior quality stockings in 8 hours. Simple and flexible in operation. 51-gauge, 60-gauge, 66-gauge.

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FOR REAL HELP TO SMALL BUSINESS

It is ironic that one of the first jobs of the Eisenhower administration, so widely, and erroneously, tagged as a "big business" administration, must be to go to the relief of small business. This is necessary because the preceding administration, while continually proclaiming its tender regard for small business, actually impaired gravely the ability of small business to carry on successfully. This it did in the necessary haste of devising an emergency tax program to finance rearmament and the Korean War. Now the new administration must revise this tax structure to give small business a chance to make its key contribution to an expanding American economy.

How Taxes Hurt Small Business

Since the outbreak of the Korean War, small business has been handicapped by two principal features of the emergency tax program:

1) Many small firms are unable to retain enough of their earnings to provide for expansion because these earnings are drastically limited by the excess profits tax.

2) Small companies have received a very small share of the tax concessions allowed by the federal government to encourage construction of defense facilities.

A small business that succeeds and hence grows is particularly hard hit by the excess profits tax. That tax, of course, applies to corporations having a net income of more than $25,000 per year. It results in taking up to 82 cents on every dollar of profit that the company earns above what is called an "excess profits credit." For most small companies the credit depends on what was earned in 1946-49. This creates an element of gamble and discrimination in determining the amount of tax to be paid. Time has proved that it is impossible to select a base period for the tax that is fair to all companies. A young company starting in 1946-49 is peculiarly vulnerable, as its earnings in that period were necessarily low. Even on modest earnings today, it would pay a high excess profits tax.

It is true that Congress wrote into the excess profits tax law provisions to lessen the impact of the tax on growing companies. However, none of these provisions in practice has given much relief to small business.

"Relief" Provisions Give Little Relief

Small firms rely almost entirely on retained earnings to provide funds for improving their plants and equipment. They get very little help from the provisions (1) that no more than 70 per cent of total profits can be taxed away, (2) that additional earnings are allowed on an increase of invested capital or (3) that growing companies are allowed a

rate of return on capital equal to the industry average.

Most large firms can obtain additional funds in the securities market. But small firms find it difficult to increase their capital by selling securities, since investors generally prefer the stocks or bonds of nationally known and seasoned companies. Few small companies, therefore, can reduce their tax burdens by increasing their invested capital, and few can meet their needs for equity capital if their rates of profit are no higher than those of the leading companies which generally set the average profit.

Small business has been equally at a disadvantage in the matter of accelerated depreciation for tax purposes. The government has encouraged a great expansion of our industrial plant, despite the very high rate of taxation on corporate earnings, by granting certificates of accelerated amortization on new plants built to support the defense program. These certificates allow business to charge off the cost of defense plants at a rapid rate. This decreases the earnings that are subject to taxes, and so increases the part of the earnings that may be retained in the business.

Growth is Stifled

But most of these tax concessions have been made to large firms especially equipped to handle the complex problems of defense production. Of the $12 billion of new facilities so far approved for fast amortization, only 11 per cent are for companies with less than 500 employees, although the share of such companies in the normal civilian business is about 30 per cent. In only 2 of 12 industries studied by the Small Defense Plants Administration were small firms receiving what was estimated to be a fair share of the total tax amortization awarded.

Because they are unable either to retain enough earnings after taxes or to step up their depreciation allowances, most small firms are unable to keep up in the race to expand and modernize plant capacity. The Small Defense Plants Administrator, in his report to Congress, emphasized that small companies have been unable to do their full part in the defense program for lack of capital.

The Council of State Chambers of Commerce recently published an eight-state survey showing widespread cutbacks of plans for new plants by small and medium-sized companies. According to this report, "high federal taxes enacted since the beginning of the Korean War appear to be placing an effective brake on the rate of industrial expansion in all the states surveyed and probably in the 48 states generally . . . It is principally the small and medium-sized companies whose growth is being stifled."

Some Ways to Help

The first step to relieve small companies should be to free them from the excess profits tax. The nation as a whole would be far better off if the excess profits tax were allowed to die as scheduled on June 30, since the tax promotes waste as it stifles incentives. It is quite possible, however, that the politics of tax reduction, as opposed to the economics, will prevent the elimination of the tax during 1953.

If the tax is extended, provision should be made for a much broader exemption to smaller corporations. If net income up to $100,000 a year, which in these days still constitutes small business, were exempted from the tax, the loss of revenue to the government would be about $175 million. This relatively small amount could easily be offset by an increase in employment and incomes if small business is freed from its financial strait jacket and allowed to expand. Careful attention should be given also to the possibilities of allowing a higher rate of return on the first $1 million of capital (roughly the amount it takes to provide 100 jobs) and of making special accelerated depreciation allowances to smaller firms. This is a matter so important that we shall return to it in a future editorial.

Relief for small business—relief from a financial paralysis that has kept it from playing its dynamic part as a growth element in our economy—would do much to give the lie to the notion that the Eisenhower administration is a "big business" operation. Much more important, it would be a long stride toward releasing the dynamic energies of many small businesses and businessmen to forward a continuing and expanding prosperity.

McGraw-Hill Publishing Company, Inc.

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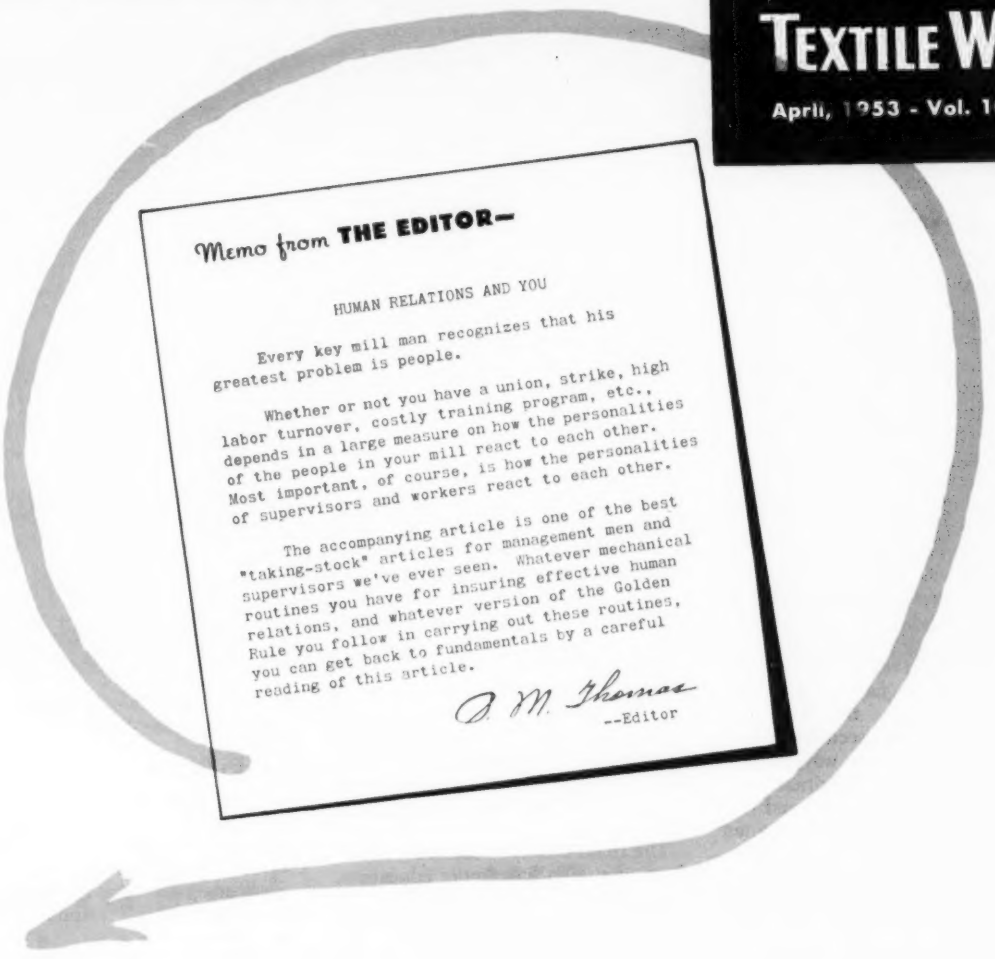
April, 1953 - Vol. 103 - No. 4


Memo from THE EDITOR—

HUMAN RELATIONS AND YOU

Every key mill man recognizes that his greatest problem is people.

Whether or not you have a union, strike, high labor turnover, costly training program, etc., depends in a large measure on how the personalities of the people in your mill react to each other. Most important, of course, is how the personalities of supervisors and workers react to each other.

The accompanying article is one of the best "taking-stock" articles for management men and supervisors we've ever seen. Whatever mechanical routines you have for insuring effective human relations, and whatever version of the Golden Rule you follow in carrying out these routines, you can get back to fundamentals by a careful reading of this article.

J. M. Thomas
--Editor

The SUPERVISOR and His JOB

Good supervision is largely a matter of principles and their execution. In this article the author tells—

- **What supervision is**
- **What a supervisor's responsibilities are**
- **What kind of training he needs**

By RICHARD M. RICE

The Supervisor and His Workers

Supervision has been defined in many ways and thought of in many relationships. One good definition is:

"Supervision is the function of directing, controlling, and coordinating the combined efforts of men, machines, and materials."[1]

A broader definition, and one that suggests some of the details of human relationships, is:

"Supervision is the selecting of the right person for each job;

"Arousing in each person an interest in his work;

"Teaching him how to do it;

"Measuring and rating performance to be sure that teaching has been fully effective;

"Administering correction where it is necessary, and transferring to more suitable work or dismissing those with whom correction proves ineffective;

"Commending wherever praise is merited and rewarding for good work;

"And, finally, fitting each person harmoniously into the working group—

"All done fairly, patiently, and tactfully so that each person is caused to do his work skillfully, accurately, intelligently, enthusiastically, and completely."[2]

Supervision involves leadership in meeting obligations to the organiza-

tion. To be most effective as a leader, the supervisor or management man should understand as much as possible about the people he is leading. Much has been said about getting to know intimately the personality drives, problems, etc., of each individual under your supervision; but it is well also to recognize and keep constantly in mind the wants common to all workers.

Workers Want To Cooperate

The American worker is quite willing to cooperate with his supervisor to get work done, provided the leadership is democratic and not domineering or restrictive. One of the most important characteristics of the worker-supervisor relationship is the dependence of the worker on the supervisor and the company for the satisfaction of his needs. The desire for security is one of the most driving needs.

"Any man who wants to work for a living should have an opportunity to work; any man who has worked all his life for a company deserves some recognition; no man should be unemployed through no fault of his own.

"In other words, the American worker typically wants security in feeling he can make his own way, achieve a certain material and spiritual satisfaction in life for himself and his family, and hold what he has gained if he is willing to put forth the effort.

"The management representative who thinks that the average American worker feels that the world owes him a living is as wrong as the union representative who feels that the American worker is more strongly motivated by a desire for welfare security than anything else. Both are dead wrong.

"Just give the worker reasonable economic stability, with an opportunity for increased standard of living, and you have answered a major portion of his security demands."[3]

Machines Make the Job—But People Keep It Going

In general, industries today may be classified as industries in which the production pace is set by machines and those in which the pace is set by people. The textile industry is primarily a machine industry.

Productivity depends on the machinery a mill has, but profitable operation of the machinery depends on effective management and how well people use the machinery.

Most supervisors have the necessary technical knowledge to do a good job, but too many are lacking in the ability to apply the principles of leadership. The supervisor's job today is essentially one of engineering in human relationships.

"It is assumed that the day of the driving supervisor has passed. Now, a supervisor is looked upon as a leader, a planner, and, of necessity, a student of the motives of people at work. It seems that the outstanding problem confronting industry today is the development of supervisors who are human engineers."[3]

Mechanical skill is one thing; skill with people is another. Industry is now taking steps to improve methods of selecting supervisors because it has learned, through experience, that the best mechanic or the most efficient operator does not always make the best supervisor.

The trend now is to select for supervisors men who have more education, who understand management principles, and who have, or can develop, skill in dealing with people.

The job of a textile worker has taken on dignity. He no longer feels that he lives "on the wrong side of the tracks." He no longer feels that he is a cog in the machine, grinding out his hours of work. He sees how he and his job fit into the over-all picture, and he has a feeling of importance and job-satisfaction.

The skilled supervisor furthers this new dignity in the worker. The supervisor or management man who is a poor engineer in human relationships blunders his way into labor trouble.

Supervisor Is Responsible to Many—

Human relations progress in proportion to how well workers, supervisors, and management accept the fact that their interests are basically the same. If either of these three rejects or fails to act upon that fact, human relations head for trouble.

The supervisor is the "go-between." His job is to interpret management policy to workers and to obtain through workers successful production keyed to those policies. He therefore has responsibilities to both management and workers. A good summary of his responsibilities is as follows:[4]

—To His Company

1. Train your workers thoroughly
2. Assign work honestly
3. Carry out instructions cheerfully
4. Plan and organize your work
5. Adjust grievances fairly for both management and workers
6. Rate your workers without prejudice
7. Place responsibility specifically
8. Supervise your workers without fear or favor

To obtain these results:

1. Get and keep the confidence and respect of your workers
2. Get the day's work out
3. Maintain quality standards
4. Keep costs down
5. Improve methods of doing work
6. Practice and enforce safety rules
7. Support, with honesty, company policies
8. Protect company property at all times
9. Develop a good organization by building workers
10. Inform your boss of any unrest and its possible causes; correct causes to prevent further trouble

—To His Boss

1. Cooperate with him
2. Obey his orders and execute instructions in detail. Inform him if there are any changes in conditions.
3. Study your work and train yourself to accept full responsibility of your job
4. Report rules fully and accurately
5. Be courteous to your boss and respect his position
6. Make suggestions for improvements

—To His Co-Supervisors

1. Cooperate with all other supervisors
2. Exchange ideas for the good of the whole organization
3. Show courtesy, respect, and tolerance at all times
4. Counsel with associates on personnel matters when invited to
5. Protect others by practicing safety
6. Never belittle an associate to a superior
7. Impress upon workers your confidence in other supervisors
8. Be fair

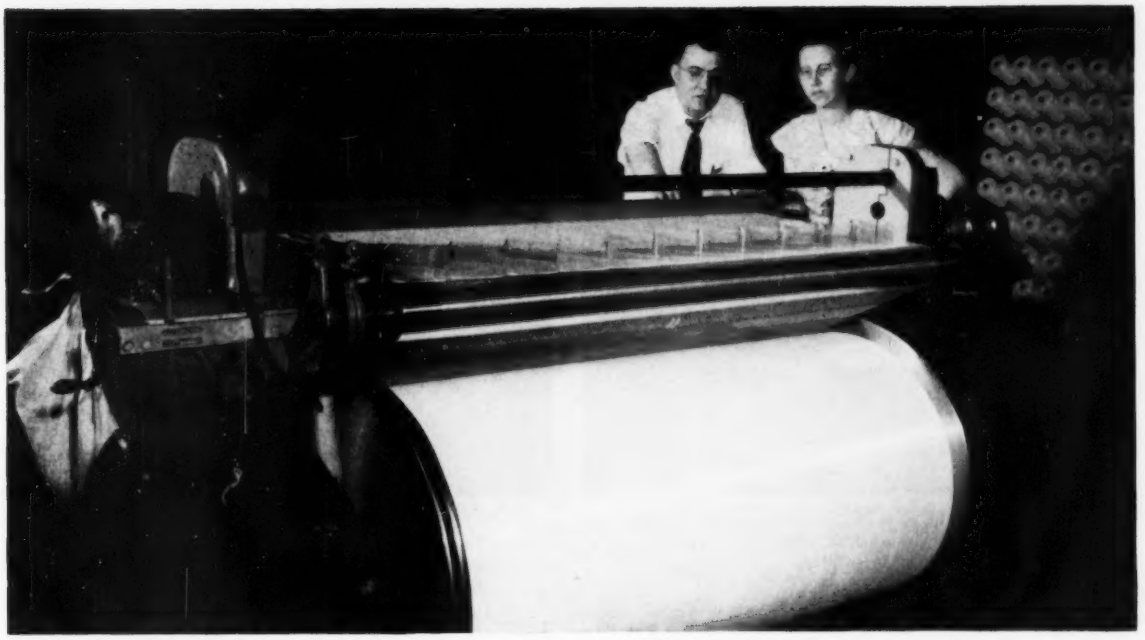
—To His Workers

1. Consider the workers at all times and respect their feelings
2. Be their honest representative to management
3. Interpret company policies intelligently
4. Be an example to workers at work and away from work

(*Continued on page 222*)

ABOUT THE AUTHOR

Mr. Rice is Instructor in Supervision, Vocational Dept., Parker High School, Greenville, S. C. Part of his work with local mills has been as instructor of training programs attended by supervisors from Dunean, Judson, Poe, Slater, and other mills in the Greenville area.



OPERATING INSTRUCTIONS are explained to the new employee by the plant superintendent. The truck in the background is used to creel the Reiner magazine.

How To Start a New WEAVING MILL With 1% Seconds, 98% Efficiency

▶ We asked the superintendent of a 2½-yr.-old mill weaving filament fabrics how he started a new mill at 1% seconds and 98% efficiency and held those figures. This is what he said: "We selected the machinery to manufacture the fabrics we planned to make and trained our employees to handle those machines skillfully." Here's his full story.

We Trained All New Employees

Our first problem in starting our mill was to find people to train as competent machine operators.

We are located in an area where many mills weave filament rayon. We began production at a time when every mill in our area was running at top production. We did not wish to take employees away from our neighboring mills, nor did we want to start our plant with floaters.

We decided to train our own employees. All applicants for jobs were carefully screened. From our prospects we selected a few people with experience and used them to train others to operate the machines. As a result of individual selection of employees, we have had only one employee to be terminated in such a way that the payment of unemployment compensation has been required.

Our 2½ yr. of production has been less difficult than we had anticipated because we have close cooperation between management and employees. In fact, it has been easy.

We believe that our plant is an example of the modern preparation plant combined with the modern weaving plant.

In larger plants where I have worked in the past, the employees usually outnumber the looms. In contrast, we have 242 XD looms and only 70 employees in our entire plant. This condition shows the advantages of efficient selection of machinery, proper layout, and wholesome employee spirit.

Special Creel Helps On Abbott Quillers

We receive our yarns in corrugated 96-cone cartons that weigh 415 lb. The cartons are carried directly to the quillers or warper and opened.

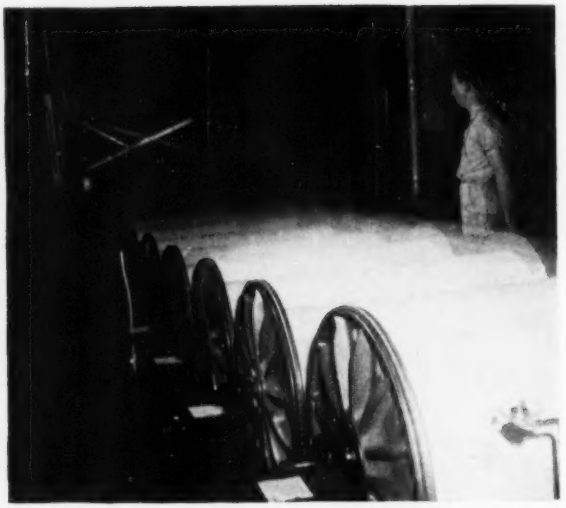
When the cones are taken from the carton at the two Abbott automatic quillers, they are transferred to a truck and placed on a creel above the quiller units. The creel is our own innovation, and we find that its use stops unnecessary handling of the yarn and also makes the operator's job easier.

One operator tends both quillers. She creels her own cones, inspects the full bobbins on the pinboards as they move over the inspection lamps, and keeps the ends up on the units.

The empty quills are placed at the hopper by a yarn boy who brings them from the quill skinner.

Both quillers are kept in good mechanical condition by one quiller fixer. He places all the cones of yarn on the creel over the units, keeps the machines clean and lubricated, makes

LITTLE HANDLING of filling is required of the quiller operator with this automatic pinboard attachment. Her job consists more of creeling, inspecting, and keeping ends up.



LOW CREEL makes it easy to see yarn flaws while the slasher is running. The back man can also make repairs quickly when ends break because he can stretch across more easily.

any necessary adjustments to the quillers during operation, and makes preventive-maintenance repairs between creeling at style changes.

The fixer also places the empty quills in the hopper. An automatic hoist is used to lift the regular quill box to the top of the bin.

Quiller Settings Are Made With Care

The automatic quiller on filament yarns requires precision settings. The tension device on each unit is watched carefully to insure correct bobbin tension for the cloth style that is being woven.

We pay particular attention to the bunch builder to prevent waste of yarn and also to be sure the bunch is correct for loom transferring conditions. Our bunches are usually ¾-in. long and are set to that specification by a gauge that controls the width of the bunch-builder adjusting bar.

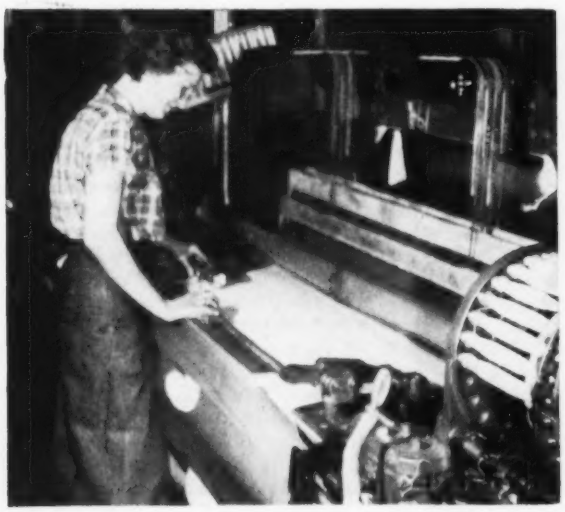
The bunch bar is set to place 3½ picks of filling on the quill. In changing from one style to another when the filling count varies greatly, we change the whole bar to keep from disturbing our bar setting.

Our quillers are equipped with the overhead cam motion. The standard tail cutter that cuts the tails between the bobbin rings is used in connection with the new compressed-air waste-end remover that picks up the waste end by vacuum.

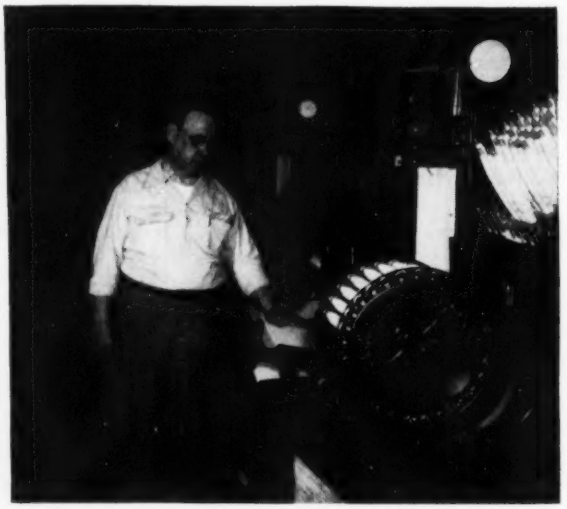
An 80-pin pinboard attachment and conveyor is connected to each quiller as an integrated component.

We are operating both quillers at a spindle speed of 5,200 rpm. The units make a complete cycle every 8¼ min., which results in a production of 200 bobbins every 8¼ min. for our operator.

The quills are 8 in. long and are of 1-in. diameter. The full bobbins of filling run 13 quills per lb. Our production per operator is 15.5 lb. every 8¼ min., which totals 122 lb. per hr.

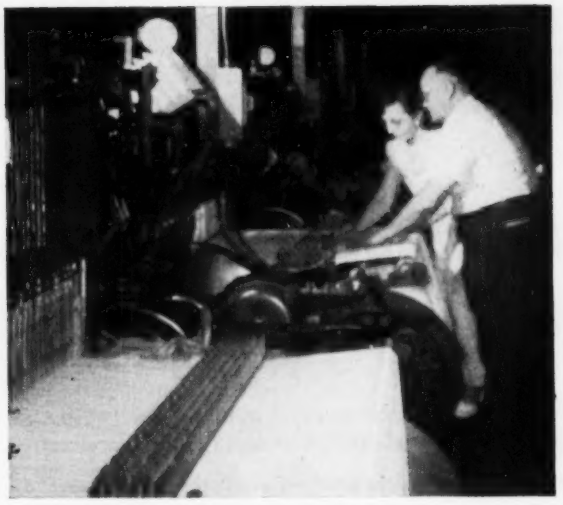


THE WEAVER PATROLS the looms to see that defects are not being made. Hardly an inch of cloth gets by unseen.



EACH SHIFT SUPERVISOR knows exactly the quality of cloth he is making at all times because he inspects his cloth once each hour.

ERRORS ARE OUT when warps are tied with a portable tying-in machine. The weaving supervisor and the machine operator check the machine together often.



QUALITY CLOTH demands the weaver's full attention. Many defects can be removed from yarns back of the drop wires without stopping the loom.

Warping—A Key Operation

Our warping equipment consists of one Reiner magazine, with a creel of 800-end capacity, and a Reiner warper.

Standard methods are used by the operator. As on the quillers, the end tension is given careful attention. We believe that skillful operation is possibly of more advantage on the warper than on any other machine in the plant because of the high speed of the warper. If a warper is operated for a few minutes with careless action or bad judgment, days of correction may be necessary on the loom.

Slasher Has Low Creel

Our slasher is a seven-cylinder Cocker, geared to run 38 yd. per min.

We pay close attention to our size formula, condition of the cooked size, cleanliness of the size kettles and box, and temperature controls of the cylinders and size containers.

Our slasher creel is placed near the floor. We designed and built it ourselves to conditions that we consider to be ideal for best slashing results. The creel is made low so that the back slasher man can see each yarn defect as he patrols the creel.

Broken ends can be tied at the section beams with little stooping and with no reaching. We believe that our creel permits us to make better warps than could be made with any other creel we have ever seen. Our slasher production is high, too.

From the slasher room, the loom beams are taken to the weave room, where they are tied to a pattern in the loom, or they are taken to the drawing-in room where patterns are drawn in.

We use a portable Uster tying-in machine when we retie our warps at the loom.

Our recent weaving schedule has called for many style changes and we now do less tying-in than drawing-in. At present, we keep five draw-in hands busy on the first shift. Our patterns run from 6 to 20 harnesses.

In preparation, we concentrate on making good filling and warps; but the weaving department is where we do the work that results in both our high production and our low seconds record.

Weaving — Where the Records Are Made

All the looms are equipped with dobbies so that many styles of cloth can be woven. At present, 24 styles of cloth are being run on dull-acetate yarns. The warp yarn is 100 den., and the filling yarn is 150 den. on most of our styles.

We build our loomfixing around gauge settings. Each loomfixer has sufficient gauges to set every loom motion. When there is any discussion as to the accuracy of a loom setting between different loomfixers or between a supervisor and a loomfixer, a decision

(*Continued on page 220*)

NEW WARPS ARE CHECKED for picks per inch, for correctly woven patterns, and for ends per inch in addition to cloth defects that are normally looked for.

A NEW DYES AND CHEMICALS FEATURE

New Aquex Resins for Rayon Give ABRASION RESISTANCE

▶ Chelated vinyl acetate copolymer complexes, when used with formaldehyde, are said to aid stabilization of rayon to wet processing.

▶ When used in conjunction with other resins, such as urea-formaldehyde and melamines, the new resins give a desirable bulky hand and allow a reduction of total resins used.

By GEORGE M. MOISSON, Assistant Editor, TEXTILE WORLD

THREE OF THE MAJOR FAULTS found with rayon goods are low abrasion resistance, low wet strength, and poor stability to wet processing. In regular production now at North Carolina Finishing Co., a relatively new type of resin is said to be going a long way toward easing these problems.

The resins are described as chelated vinyl acetate copolymer complexes, produced by Aquex Development & Sales Corp., Whippany, N. J. Their value is said to come from their ability to cross-link with resins or reactant chemicals with active methylol groups. This bonding is resistant to neutral or alkaline hydrolysis.

At North Carolina Finishing Co., naphthols, vats, and selected direct dyes are used on goods slated for the vinyl-complex finishes. Color change to the treatment is not pronounced and is no worse than with other resin formulations. Aftertreated direct colors are not adversely affected by the resins themselves; but when they are used in combination with urea-formaldehyde or melamine resins, the usual precautions must be taken. It is best to select dyestuffs of optimum fastness to light and washing.

One advantage found in the use of the vinyl-complex resins is the fact that rework lots can be topped up for shade corrections without fear of streakiness or blotches.

Use With Formaldehyde For Washability

The resins have been used with formaldehyde to produce a washable finish for 100% spun-rayon fabrics. This finish, it is reported, has the following advantages: low residual shrinkage; no progressive shrinkage in repeated launderings; no chlorine retention; improved wet strength; and economy in chemical cost, preparation, and application of the finish.

For A Washable Finish

Vinyl-complex resin	12	(%)
Formaldehyde	12	
Sequestering agent	0.25	
Cationic softener	0.50	
Sodium sulfate	2	
Sodium acid sulfate	2.50	

A normal finishing procedure is followed. No special machinery need be purchased. Pad the goods, frame-dry to slightly over finished width, cure at 320°F., neutralize, and wash at 140° F. Slack-dry and steam-frame to finished width.

Use With Other Resins For Improved Effect

When the resins are used in combination with the normal monomeric urea-formaldehyde resins, or the modified urea-formaldehyde resins, lower residual shrinkage and better control of progressive shrinkage are said to be obtained. The hand is improved, and the weight of the fabric finish is increased because the resins add bulk and body to the fabric. The flat-abrasion resistance of the fabric and durability to washing are enhanced because of the cross-linking between the vinyl-complex resins and the methylol groups of the urea-formaldehyde resins.

For A Rayon Suiting Fabric

For finishing a 100% spun-rayon suiting to get crease resistance, shrinkage control, and improved flat abrasion, the following formula is recommended:

Vinyl-complex resin	8 to 12	(%)
Urea-formaldehyde resin (cream type)	30	
Cationic softener	0.50	
Sequestering agent	0.10	
Catalyst	1	

Pad, dry, cure, scour, dry relaxed, and steam frame in the normal way.

For a Rayon-Acetate Suiting

A typical formula for use on a 50/50 viscose-acetate suiting to develop shinkage control, added weight, and crease resistance is as follows:

Vinyl-complex resin	12	(%)
R-1 type resin	15	
Cationic softener	0.33	
Catalyst	0.37	

The fabric is processed in the normal resin-finishing manner.

These formulas represent several of the typical formulations. Finishes that incorporate water repellents and color-setting compounds have also been processed satisfactorily in production runs, it is reported.

[A new application of Aquex resins in conjunction with Cuprofix is discussed on page 132.]

Annual KNITTING Section

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Reduce Tuck Stitches in Your UNDERWEAR FABRICS

▶ **There is less difficulty in fixing tuck stitches than in finding out what causes them**

▶ **Here's how to recognize causes of tuck stitches in rib and interlock fabrics and how to correct them**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

TUCK STITCHES CAN BE SPLIT into two categories: (1) those that appear in vertical lines and (2) those that are scattered over the cloth. The first fault can usually be traced to a faulty needle. The second fault is more difficult to trace because the faults can be caused by many factors.

Tuck stitches on fine-gauge fabrics may be mistaken for pin holes, welt stitches, and other small faults that appear in knitted cloths. Close analysis of a tuck stitch will reveal whether it is a single tuck or a double tuck. A double tuck contains three needle loop but a single tuck has two needle loops.

It is possible for a needle to tuck up to six stitches, but if the needle continues to tuck, the needle hook or the yarn breaks.

Prevention of Faults Is the Best Remedy

The majority of tuck-stitch faults are those caused by bad needles. Where the fabric is required for cheap garments, these tuck stitches can be turned to the inside of the cloth. Cutters can cut the tuck-stitch line out of garments that are seamed down the side.

The former practice reduces quality, and turning faults to the side involves additional cost. Preventing the fault at the knitting machine will improve quality and reduce costs.

A 16-feed rib machine will knit 1 yd. of cloth in 2 min., and yards of faulty fabric can be produced if the cloth is not frequently examined. Stop motions are not built to detect tuck stitches, so the machines must be constantly patrolled by the knitter to reduce seconds. High work loads and poor machine layouts can prevent the knitter from making a thorough examination of his cloth at regular intervals.

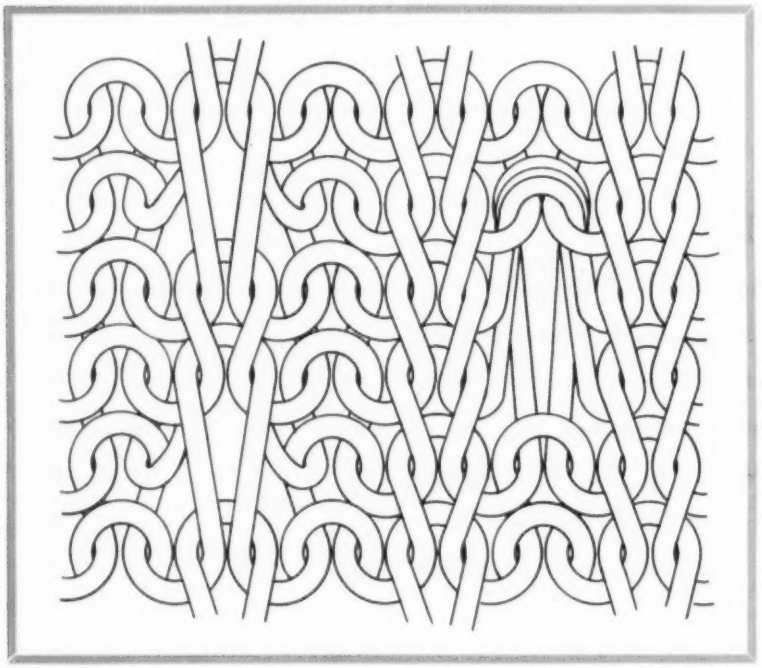
Lights placed inside the fabric tube help the operator to spot faults quickly. A light fixed to the machine frame between the bottom plate and the top ring can be arranged to spot tuck stitches. A mirror fixed to the back of rotating-head machines saves the operator trouble and allows him to spot faults sooner.

How To Find a Faulty Needle

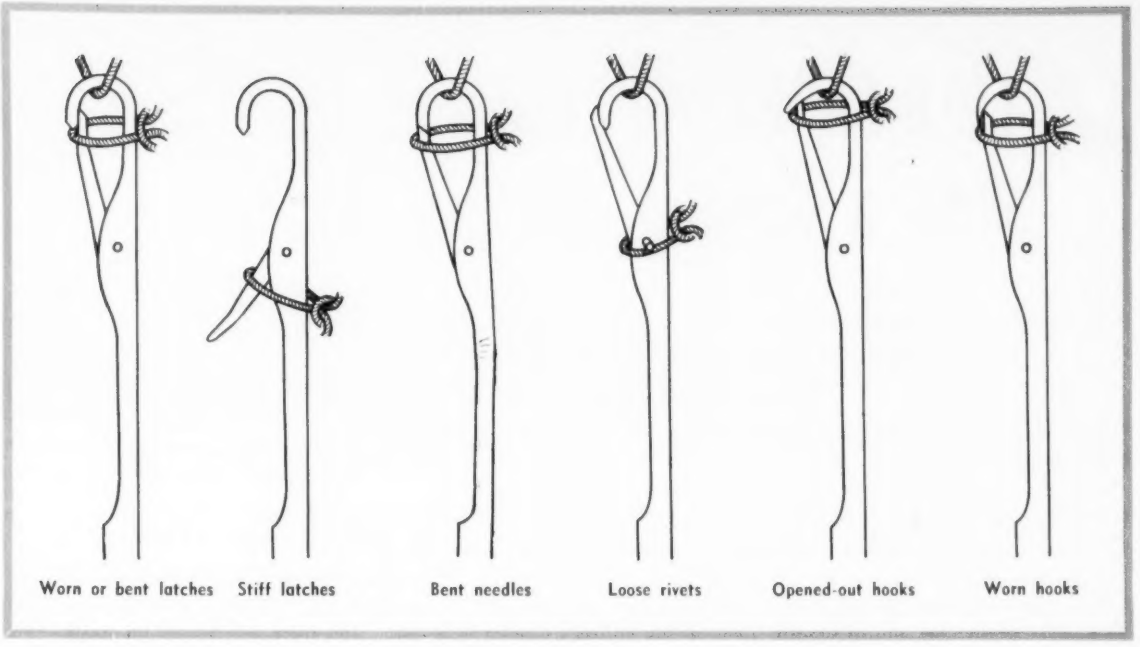
Where tuck stitches are caused by faulty needles, the needle can usually be traced by following the tuck-stitch wale to the dial or cylinder. A small hooked cylinder needle can be run up the faulty wale and thrust through the gap between the dial and the cylinder. Close analysis of the fabric will reveal whether the tuck stitch is caused by a faulty dial needle or a faulty cylinder needle.

If the faulty needle cannot be spotted when the tuck-stitch line is traced to the dial or cylinder, any needle may be removed. Then run the machine for a few revolutions without the needle. If the tuck stitch is still in the cloth, count the wales between the fault and the drop stitch made by the missing needle.

Wear is generally the cause of faulty needles. Latches open and close 4-million times a week on the needles of a 16-feed machine. It is the latch that usually wears first. The rivet hole becomes enlarged, and the latch becomes sloppy. The spoon does not cover the hook. The old loop catches in the hook instead of sliding over the latch during the cast-off. The latch may function perfectly at the next feed, and the two loops cast off together, forming the tuck stitch.



THE DOUBLE TUCK in the fifth wale is caused by a faulty dial needle. The two single tuck stitches in the second wale are caused by a faulty cylinder needle.



THESE SIX NEEDLE FAULTS cause tuck stitches.

How To Care for Your Needles

All needles eventually wear if they survive broken butts and other accidents, but their useful life can be prolonged by a program of lubrication. Most mills adopt a policy of oiling latches profusely every shift. This produces several inches of dirty cloth. One mill has reduced this waste and prolonged its needle life by lightly spraying the needle latches with a spray gun twice during the shift.

Some mills follow a program in which all the needles in the machine are removed every 5 or 6 wk. The dial and cylinder slots are cleaned out, and new needles are replaced in the slots. The old needles are cleaned, checked, and used for replacements. The needles are rejected if they have signs of wear or if the latch can be turned underneath the hook with the thumbnail. Yarn-carrier settings should be checked if the needle hooks wear to a sharp point. The yarn carrier should be set as close to the needles as possible without touching them.

Some hooks have a tendency to straighten out after a period of use. The latch becomes dubbed in, and the only remedy is to fit a new needle.

How To Straighten Needles

After a smash, needle latches sometimes become bent and stiff and cause tuck stitches. By careful manipulation between the forefinger and thumb, the stiff latches can be made to give many hours of useful service.

Dial needles that become bent upwards and do not cast off their stitches are a frequent cause of tuck stitches. Using the top ring as a surface plate is a favorite knitter's check on bent needles.

Rivets work loose, protrude from the cheek, and prevent the loop from sliding over the latch. Fitting a new needle is the only remedy for loose rivets.

How To Deal With Intermittent Tuck Stitches

Tuck stitches that appear intermittently over the cloth are more difficult to trace. If the faults appear to contain a number of double tucks and are clustered close together, the take-up rolls or the drive dogs are to be suspected. If the tuck stitches are close to a dog, the dog should be loosened or the other dogs tightened.

Insufficient weight on the take-up rolls very often causes tuck stitches to appear all over the cloth. Over a period of years, knitters develop a sense of touch that tells them whether a fabric has too little weight on it or too much. When the correct tension is applied, the fabric should feel like well-padded upholstery.

Use a Dial Needle As a Thickness Gauge

Tuck stitches may be caused by the dial being set too low. The take up is prevented from doing its work efficiently. The loops are allowed to ride up the needles when they should clear off the latches. The height of the dial controls the length of the stitch, but other means should be found to tighten the stitch if the dial should be too low to allow fabric to pass through. The thickness of a dial needle is a good gauge to measure the minimum distance between the dial and the cylinder.

Trying to knit too-heavy yarns often results in tuck stitches. Through practice, knitters know the limits of their machines, but a minimum cotton-yarn number can be found from the formula: $\frac{9}{\text{Cut}^2}$.

A frequent cause of tuck stitches on the dial needles is insufficient cast-off. The dial cast-off cams should be adjusted on 1 x 1 rib fabric to pull the needles in far enough to allow the old loops to slide over the needle hooks. If the dial cast-off cams are pulled too far in, other trouble such as cutting may result.

Tuck stitches frequently appear in fine-gauge interlock cloths when the machine starts up cold. Mills have remedied this situation by maintaining a 60° temperature throughout shutdown periods.

Knitters' experience shows that tuck stitches can be caused by reasons other than those outlined. A good understanding of the basic principles of knitting often reduces the time required to find the fault. As one fixer puts it, "There is little difficulty in fixing the trouble once we know what the cause is."

FULL-FASHIONED Mill Reduces Costs With a Special Handling System

- **Handling makes pull-threads**
- **Pull-threads make seconds**
- **Seconds make high costs**

▶ Here's how one mill reduced its costs by eliminating 40% of the handling of its hosiery.

By H. B. LeFEAUX
Consulting Editor, TEXTILE WORLD; Superintendent, Vanette Hosiery Mills

WE HAVE CUT HANDLING of our hosiery in the gray and in the finished state by 40%. Our system eliminates excess handling in all stages from knitting to shipping. The system includes mill-made carrying sticks, knitters' racks, a truck, seamers' racks, chutes for seamers' work, magazine trays, and automatic inspecting machines.

Knitters' Racks Support Sticks

A rack is fitted to each knitter's cabinet, and a 36-in. piece of wood cut from 1¼-in. square stock sits on this rack. Sixteen brass hooks are screwed into the length of wood, eight on each side.

The knitter is supplied with a "stick" at the start of each shift. The entire 8-hr. production is hung on the stick at the end of the shift. No odd stockings are allowed to accumulate in the knitter's cabinet or locker. This idea sometimes results in odd quantities (such as 15 doz. and four stockings), but this condition is preferred to the pull-threads that would result from keeping odd stockings tucked away.

One work ticket is used for one knitter's 8-hr. production. The knitter fills out the lower part of the ticket, which is later torn off and sent to the office for the payroll. If two sizes are run by one knitter during the day, he makes out a ticket for each size.

Truck Transfers Stockings

At the end of each shift a girl picks up the stockings by handling only the stick. The girl places the stick on a rack fixed to a truck, and she removes the stub from the ticket and rolls the truck into the presetting cabinet.

After presetting, the truck is pushed to the seaming room and down the seamer-service aisle, a 4-ft. alley between each seaming unit. One seaming unit consists of two rows of eight seaming machines. The seamers are placed 23½ in. apart, and the rows are arranged back to back.

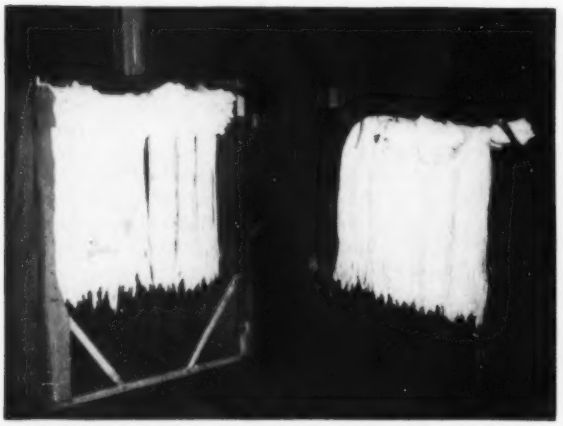
Seamers' Racks Support Sticks

The wooden sticks are taken off the truck and placed on special racks built by each seamer. These racks hold two sticks. The stockings have not yet been handled since they left the knitter, and they are still in their original batches.

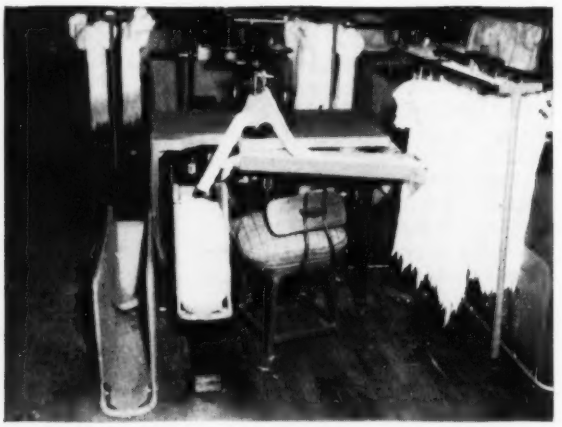
The seamer removes 1 doz. from her rack, unties it, and places it in the special trough on her seamer table. As the stockings leave the feed cups, they fall into a plastic chute that guides the stockings into the magazine tray. This tray, made of aluminum, is suede covered and holds up to 17 doz. stockings.

Magazine Trays Convey Stockings to Inspectors

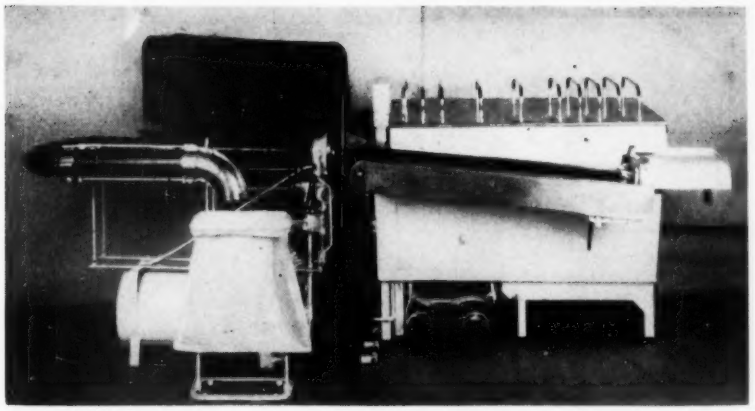
The magazine tray is slightly raised to keep the seamer from having to reach awkwardly to place her seamed



THE RACK is fixed to the knitter's cabinet (right) and supports the "stick" that holds up to 16 doz. stockings. At the left is the truck that carries the stockings to the presetting cabinet.



THE SPECIAL TROUGH and plastic chute is fixed to the seaming machine to reduce handling of the stockings. The seamer's rack that holds the "sticks" can be seen at the right.



AUTOMATIC INSPECTING MACHINE is used at Vanette Hosiery Mills. The magazine tray can be seen on the platform at the left.

work into the tray. To facilitate better handling during inspection, the seamer is requested to place her stockings on the tray with the welts in a straight line even with the open end of the magazine tray.

The seamer does not tie up each dozen but lays the original knitter's-shift output in the tray. She fills in the bottom portion of the ticket and tears it off as her record for payroll use. The remainder of the ticket is placed in the pocket of the magazine tray. The seamer slides the tray over to the gray inspection machine and starts to fill up another tray kept at her disposal.

Automatic Inspecting Machines Improve Production

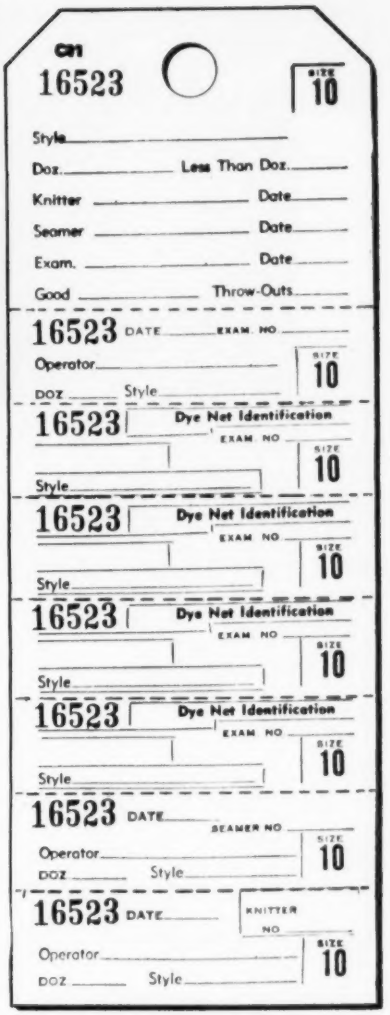
For each seaming unit there are two inspecting machines placed in a central position to improve workflow from the seamers to the inspectors.

Four No. 1 Ammon Automatic inspecting machines are used here for gray inspecting. They are air operated at 44 psi. A 5-hp. air compressor supplies ample pressure for the four machines.

The gray inspector places a loaded magazine tray on the platform. With her left hand she draws the welt of the stocking onto the form. The right hand brings the welt to the top of the form, while the left hand helps pull on the heel portion. If the seamer has taken care to keep all the welts level, this job is done fast with minimum handling.

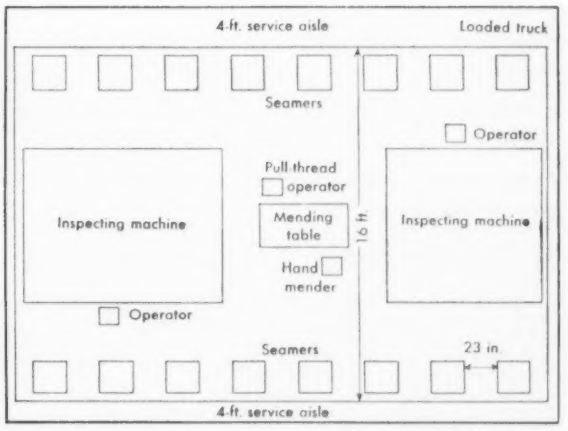
The form is now expanded and both sides of the stocking are inspected. The form is expanded by a toe pedal and is turned with the operator's left hand at the toe portion. The toe is pressed down into the gripping fingers by the left hand, and the form is collapsed by releasing air from the power cylinder.

(*Continued on page 268*)

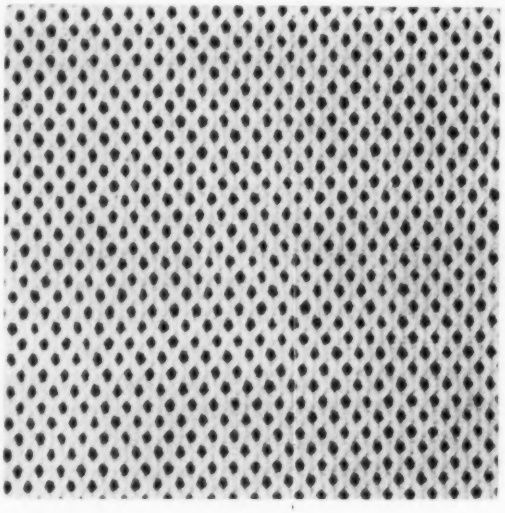


THIS TICKET is attached to each batch. Stubs are torn off by the knitter and seamer for use as payroll checks.

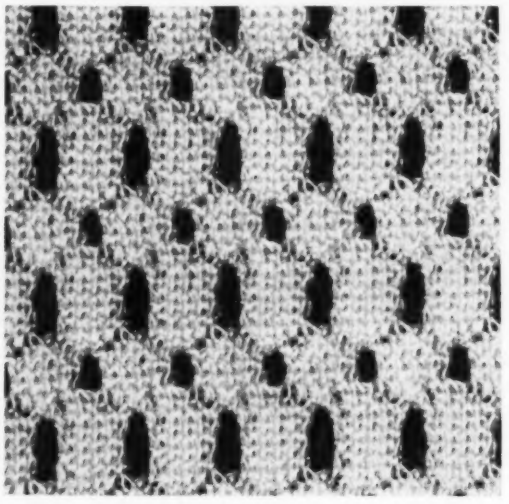
SEAMER-SERVICE AISLE is 4 ft. wide and runs between each seamer unit. A truck is pushed down the aisle to load seamer's racks without interfering with operators.



SEAMING UNIT consists of two rows of eight seamers back to back with inspecting machines and mending table located in the center.



Back bar 1-in 1-out — 1 • 1 •
Front bar 1-in 1-out — 1 • 1 •
Back pattern wheel 2-3, 1-0
Front pattern wheel 1-0, 2-3
Ratio 1:1



Back bar 11111 •
Front bar 11111 •
Back pattern wheel 1-0, 3-4, 3-2, 4-5, 4-3, 4-5, 4-3, 4-5, 4-3, 4-5, 2-1, 2-3, 1-0, 1-2, 1-0, 1-2
Front pattern wheel 4-5, 2-1, 2-3, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 3-4, 3-2, 4-5, 4-3, 4-5, 4-3

TRICOT Costs Can Be Reduced With Mesh

▶ Mesh tricot fabrics require fewer ends, so yield is increased and costs do down

▶ Nets are made by using special pattern wheels and threading up the guides 1-in 1-out, or 2-in 2-out

▶ Novelties are made with irregular warp entries, colored yarns, and special pattern wheels

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

More than 80% of the tricot fabrics made today are jersey (2-3, 1-0 front bar and 1-0, 1-2 back bar). As the market for jersey fabrics becomes saturated, tricot knitters are turning to other designs.

Why not turn to mesh designs to produce fabrics that are different? Threading up may be a little more difficult, but most meshes are no more difficult to knit than jersey fabrics.

Many variations can be made with jersey wheels. Thread up the back bar 3-in 1-out. Leave the front bar threaded. Leave the pattern wheels and the ratio as you would for jersey.

Specially cut wheels are required for fabrics with larger openings.

How Holes Are Made

Nets are made with a 1:1 ratio and balanced lapping movements. Thread your guide bars up 1-in 1-out, or 2-in 2-out. Make sure that every needle receives at least one thread at each course.

Correct gaiting or lining up of the filled guides is very important. On 1-in 1-out fabrics, see that the two threaded guides are lined up when they swing through on the first course of the design.

An open space appears in the cloth, thus forming a hole where two wales are not connected. The holes in the cloth can be made large or small according to the cutting of the pattern wheel.

Small-hole designs are made by con-

Back bar 29 in.
Front bar 29 in.
Back pattern wheel 1-0, 1-2, 2-3, 3-4, 3-2, 3-4, 4-5, 5-6, 5-4, 5-6, 6-7, 7-8, 8-9, 8-7, 8-9, 9-10, 10-11, 10-9, 10-11, 11-12, 12-13, 12-11, 11-10, 11-12, 12-13, 12-11, 11-10, 10-9, 10-11, 10-9, 9-8, 8-7, 8-9, 8-7, 7-6, 6-5, 5-4, 5-6, 5-4, 4-3, 3-2, 3-4, 3-2, 2-1, 1-0, 1-2, 2-3, 2-1
Front pattern wheel 12-13, 12-11, 11-10, etc.

Back bar A A • • V V • •
Front bar • • A A • • V V
A = Acetate, V = Viscose
Back pattern wheel 1-0, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 6-5, 5-4, 4-3, 3-2, 2-1
Front pattern wheel 3-2, 1-0, 1-2, 2-3, 3-4, 4-5, 5-6, 7-8, 7-6, 6-5, 5-4, 4-3

Fabrics

necting the wales every two or three courses. Warp entries of 1-in 1-out with 1-0, 2-3 or 1-0, 2-3, 4-5, 3-2 pattern wheels produce small holes. Medium-size holes are made with 1-0, 1-2, 1-0, 2-3, 2-1, 2-3 pattern wheels and 1-in 1-out warp entry.

Larger holes are made with 2-in 2-out or more irregular warp entries. Very large holes can be made by repeating the 1-0, 1-2 laps between the connecting laps.

How To Knit Mesh Stripes

Horizontal stripes of mesh and plain fabric can be made with 1-in 1-out warp entries on both bars. Cut the back pattern wheels—

1-0, 2-3, 4-5, 3-2, 1-0, 2-3, 4-5, 4-3, 2-1, 2-3, 4-5, 4-3, 2-1, 2-3, 4-5, 3-2

and the front pattern wheels—

4-5, 3-2, 1-0, 2-3, 4-5, 3-2, 1-0, 3-4, 2-1, 2-3, 4-5, 4-3, 2-1, 2-3, 1-0, 2-3.

Vertical open-work stripes are easier to make than horizontal stripes. Leave threads out of one guide bar or out of both guide bars. Use any pattern wheels except Atlas or traverse wheels. Make sure that each needle receives a loop.

Here is a pattern with alternate vertical stripes of mesh and plain fabric.

Warp entries—

Back bar	11.1.1.11
Front bar	1111.1.1.

. = empty guides
1 = threaded guide
Back pattern wheel 1-0, 1-2, 2-3, 2-1
Front pattern wheel 2-3, 2-1, 1-0, 1-2

How Diamond Designs Are Made

Many attractive laces are made by using Atlas or traverse pattern wheels. The pattern shows itself in diamonds or zigzags.

This pattern has both vertical stripes and zigzags—

Back bar	.1111111111.111
Front bar	11.111111111111

Back pattern wheel 1-2, 1-0
Front pattern wheel 1-0, 2-3, 2-1, 3-4, 3-2, 4-5, 4-3, 5-6, 5-4, 6-7, 6-5, 7-8, 7-6, 7-8, 6-5, 6-7

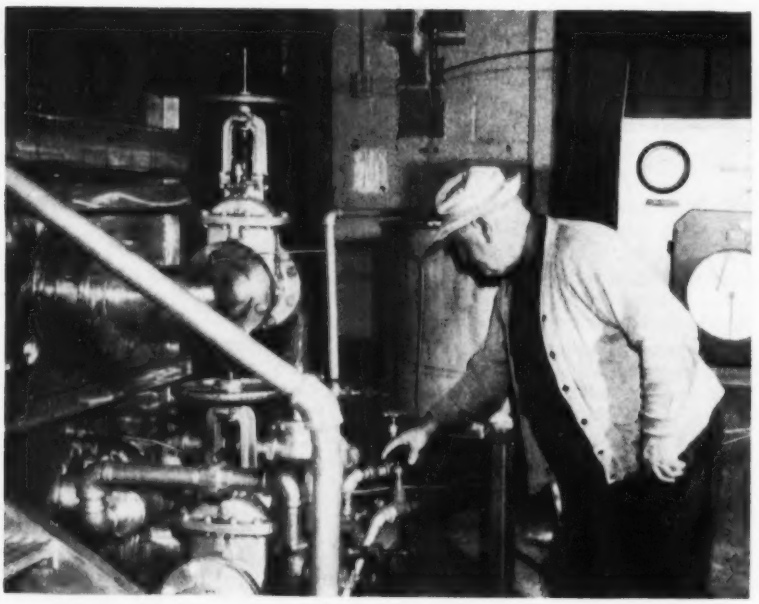
By using the new dope-dyed yarns or dull and bright yarns or by cross-dyeing viscose and acetate yarns, you can make an unlimited number of fancy mesh patterns without purchasing additional equipment.

New TRICOT-DYEING Method Saves Cloth, Time, Chemicals

▶ At Kingsboro Silk Mills, Inc., the new beam-dyeing technique for tricot has proved to be a short-cut method for faster production of a better product.

By **GEORGE M. MOISSON**
Assistant Editor, TEXTILE WORLD

CHECKING CIRCULATION of the dyebath, Gregory Quick notes the correct level of dye liquor before dyestuff is added.



ADJUSTING FEED of dye liquor, Sam Rawlston can now sit back and relax. The recorder-controller takes over.

ROGERS LINGERIE HAS TAKEN advantage of an open-width beam-dyeing process for nylon tricot at its Kingsboro Silk Mills, Chattanooga, Tenn., to save much time, labor, cloth, and chemicals.

The remarks made by the department heads during a tour of the plant serve to point out how the process works:

"We save time and labor—no tacking of selvages, no handling of goods in rope form. Dye lots are larger; pieces delivered to the cutters are longer."

Gray goods directly from the knitting machines are sewed together and wound around the beam, one layer on top of the other, as tightly as possible without damage to the cloth. This winding should be done mechanically with a batcher or short frame to spread the goods as smooth as possible.

Since the length of each individual piece of tricot handled on the Burlington beam-dyeing machine is limited only by the knitting-machine capacity, longer pieces can go uncut through the plant. Under the beck-dyeing system the selvages must be tacked together, short pieces sewed together, and long pieces cut to the required length. More seams mean more waste.

"Shorter liquor ratio and different procedures permit a substantial saving on chemicals . . ."

The loaded beam, containing up to 1,600 yd. of cloth, is carried to the dyehouse and lifted by an electric hoist into the machine.

Two operations, prescour and dyeing, are normally used in becks. With the new machine, however, the prescour has been found unnecessary; and the low liquor ratio tends also to reduce the number and quantities of dyeing assistants.

Experiments are still being made to determine the optimum amounts and kinds of dyeing assistants and the best liquor ratio.

Note: A Textile Equipment News item on the new Burlington dyeing machines will be found on page 120 of this issue.

On a typical batch, these amounts of chemicals are used:

Burlington machine (total chemicals)		Normal prescour	Normal dyeing
Tspp	8(pt.)	8(pt.)	8(pt.)
Xylene	8	16	8
Retarder	1		
Antifoam	½		
Water softener		4	4
Pine oil		16	8
Sulfated fatty ester		16	16
TT 2800			8
		60	52
Total	17½ pt.	112 pt.	

Note the difference in chemicals used. Only 15.6% of the normally required dyeing assistants is needed when the prescour and beck-dyeing procedures are eliminated. Low liquor ratio (as low as 8:1) and efficient distribution of the bath throughout the fabric contribute much to these savings.

"The beam carries the cloth completely through the mill. There's no manual handling, no soiling, no picks . . ."

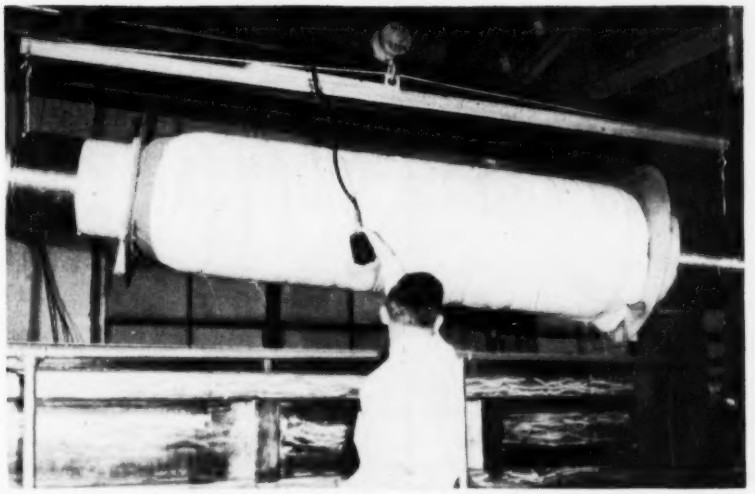
After dyeing and rinsing are completed, the beam is lifted and allowed to drain; then it is placed in a vacuum extractor. The extractor removes excess water and leaves the goods ready for drying and heat setting.

On a specially built cart, the beam is rolled to the head of the dryer-heat-setting frame. A nip roll feeds the cloth into a scray from which the pin frame is fed. At the end of the frame the cloth winds on a take-up roll, which, in turn, serves as a feed roll for the automatic cloth-spreading machine.

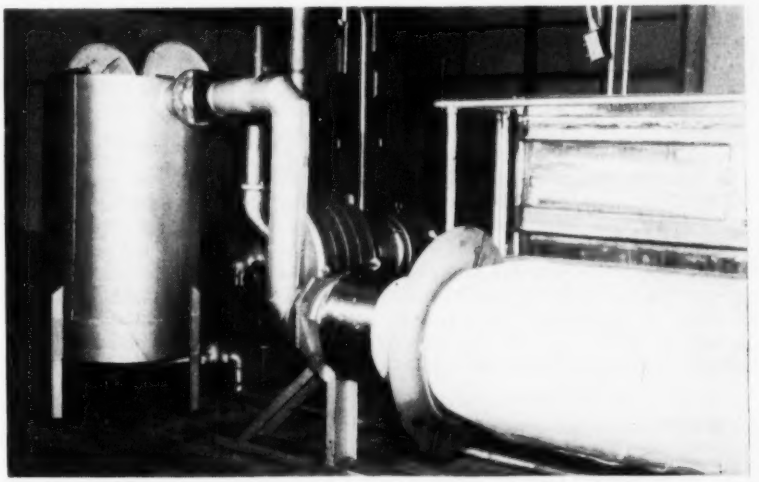
"Our cutters are beginning to demand goods dyed on the new machine. The goods lie flat, selvages don't curl, and there are no rope marks."

Rogers Lingerie was one of the first knitting firms to install one of the open-type Burlington machines. Until the installation was made, all tricot was boiled off and dyed in conventional becks. The new machine has not replaced all the becks yet, but it looks as if that will occur eventually because the cutters have found that goods dyed by this method handle better and lie flat on the table.

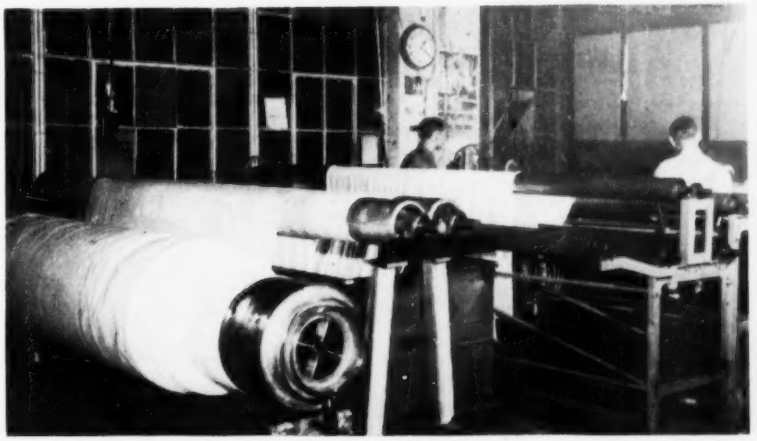
Burlington's new pressure-type machine has been installed at Kingsboro, but no performance data are yet available. The higher temperatures obtainable with the closed machine will permit use of acid dyes and will pave the way for future work with Dacron, Orlon, and other newer synthetics.



REMOVING THE BATCH from the machine, Lester Hurley, dyer, allows the roll to drain before lowering it to the extractor.



EXTRACTING SURPLUS WATER, a 75 hp., 220- to 440-v. a.c., motor-driven vacuum pump rotates at 3,550 rpm.



ENTERING THE FRAME, the tricot is drawn from the beam into a scray box by a set of rolls driven by a variable-speed drive.

A Training Manual Will Help To Reduce CIRCULAR-KNITTING Costs

- **Training periods are shortened**
- **Uniform methods are taught**
- **Instructor's time with the learner is cut down**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

MANY OPERATIONS in the knitting industry are repetitive. You can prepare a training manual covering these repetitive jobs to help your learners to learn faster and to do their work better.

For instance, the major duties of a circular-knitting machine operator are:

1. Loading the bobbin rack
2. Removing the knitted fabric
3. Separating the garments
4. Oiling and cleaning
5. Changing needles
6. Inspecting the work for faults

These operations can be broken down into small jobs that can be written down in simple language.

Inspecting the fabric for faults is a very important task. A small manual could be written on what faults are most likely to occur and how they can be recognized. The manual can be illustrated with charts showing cam systems, various-height butts with their respective numbers, and slider set-outs. Sketches explain the correct way of doing certain jobs far better than many words, because they stick in the minds of the learners.

The trainees should be encouraged to use their manuals frequently during their training period and allowed to take them home to study.

Manual Cannot Substitute for a Good Instructor

Although the manual will help the instructor, it should not replace the instructor and should not eliminate practical instruction.

A foreman or competent fixer can gather the notes for the manual. Double-spaced type should be used to allow the learner to add his own notes. The type and illustrations can be duplicated and bound between two stiff covers. Better still, each individual sheet can be pasted to stiff cardboard.

Sample Manual

Here is a sample manual prepared for Komet machines.

Changing Sliders

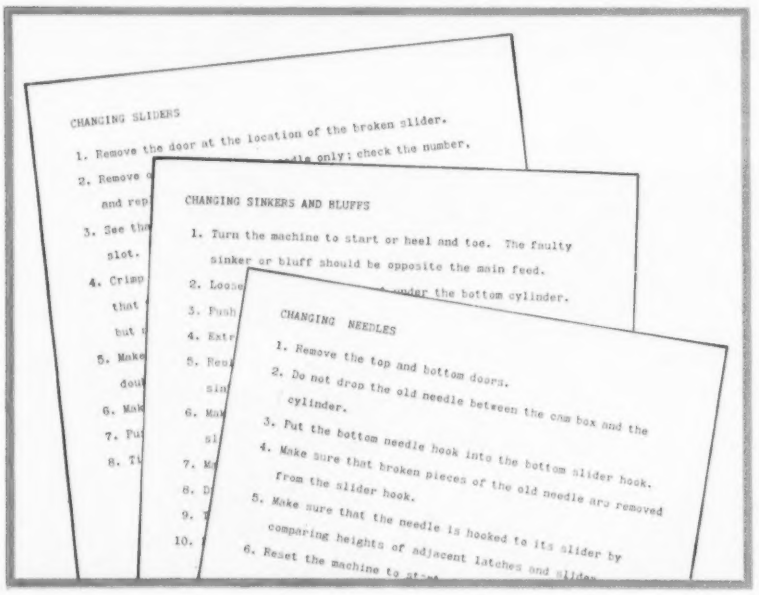
1. Remove the door at the location of the broken slider.
2. Remove one slider and its needle only; check the number, and replace immediately.
3. See that no foreign matter has accumulated in the slider slot.
4. Crimp the sliders away from the direction of rotation so that the amount of bend will allow the slider to move freely but not fall of its own accord.
5. Make sure that the correct slider is inserted. (If in doubt consult the slider set-out.)
6. Make sure that the needle is hooked with the slider.
7. Push the slider in flush with the cylinder.
8. Tighten the door screws.

Changing Needles

1. Remove the top and bottom doors.
2. Do not drop the old needle between the cam box and the cylinder.
3. Put the bottom needle hook into the bottom slider hook.
4. Make sure that broken pieces of the old needle are removed from the slider hook.
5. Make sure that the needle is hooked to its slider by comparing heights of adjacent latches and slider butts.
6. Reset the machine to start to prevent waste.

Changing Sinkers and Bluffs

1. Turn the machine to start or heel and toe. The faulty sinker or bluff should be opposite the main feed.
2. Loosen the sinker-ring nut under the bottom cylinder.
3. Push up the sinker cup from underneath with the nut.
4. Extract the faulty sinker and bluff with pliers.


CHANGING SLIDERS
CHANGING SINKERS AND BLUFFS
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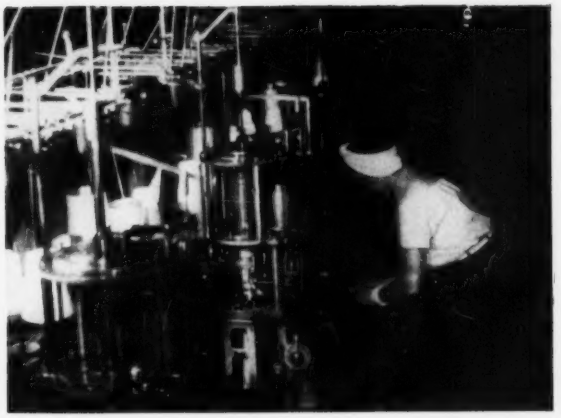
1. Remove the top and bottom doors.
2. Do not drop the old needle between the cam box and the
cylinder.
3. Put the bottom needle hook into the bottom slider hook.
4. Make sure that broken pieces of the old needle are removed
from the slider hook.
5. Make sure that the needle is hooked to its slider by
comparing heights of adjacent latches and slider

SHEETS FROM MANUAL can be either pasted on cardboard or bound between stiff covers. Double-spaced type permits learner to add his own notes.

THREADING UP any knitting machine is an important job and should not be overlooked in a training manual. Improper threading can cause irregular knitting tensions.



INSPECTING the work is probably the most important task of the knitter. A description of frequent faults should appear in a training manual.

5. Replace the sinker and bluff while you hold up the sinker cup.
6. Make sure that the bluff is on the correct size (over the slider-bluff bit).
7. Make sure that the sinker is in its correct position.
8. Drop the sinker cup.
9. Tighten the sinker-ring nut.
10. Do not turn the machine when the sinker nut is loose.

Timing and Starting

1. Turn the main drum to the starting position.
2. Turn the striper-selector levers away from the selector bar.
3. Set the chain to the top half of the brass link, and put the trip lever out of action.
4. Replace all broken elements if necessary.
5. Run the fabric to the take-up rollers before knitting rib.
6. Check the position of the chain-saver rack wheel (in a position so that the low tooth is opposite the racking lever).
7. Put the main-feed yarn finger in position.
8. Be sure that all other yarns are threaded up correctly.
9. Be sure that the double-feed attachment is in time.
10. Line up the timing-lever with the slot, with the main pawl ready to start its long rack.
11. Drop the pawl into position.

Press-off in Leg or Foot

1. Discover the cause of press-off.
2. Thread up the yarn.
3. Rack the chain to the starting position.
4. Rack the drum to the starting position (see Timing and Starting).
5. Knit half a dozen courses.

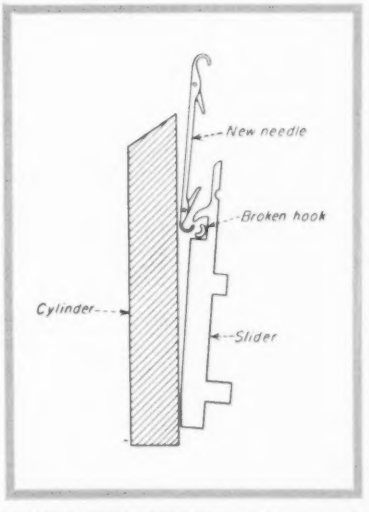
(*Continued on page 266*)

Labor Policy Affects Training

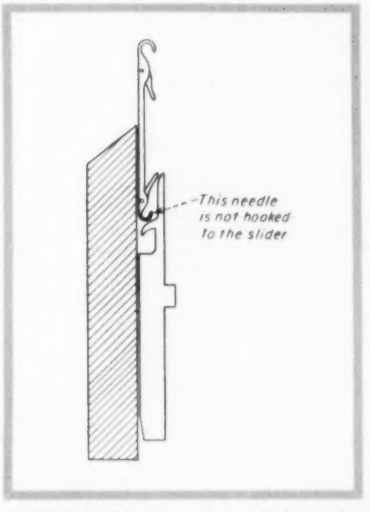
It is difficult to write a universal training manual for knitters and fixers, because few mills allocate their workloads in the same manner. Some mills employ female knitters whose duties are very simple. Other mills employ men who are permitted to change faulty needles and sinkers.

More training is necessary for knitters with greater responsibility. If these knitters are trained well, they will assume the more routine duties of the fixer and leave the fixer to concentrate on more serious matters.

The number of fixers may be reduced, but there is not necessarily a reduction in costs as the male knitters must be paid for their additional work.



BROKEN NEEDLE HOOKS must be removed, or the slider hook cannot grasp the needle hook correctly.



A NEW NEEDLE must be pushed down far enough to allow its hook to slide below the slider hook.

SKETCHES such as these will make your manual more interesting and will emphasize the most important points.

A METAL TRAY is used to assist in sliding the anklets into the cellophane bag to preserve a well-packed appearance.

CARDBOARD TOP FLAPS are stapled on some of the cellophane bags. The brand name and other information are printed on the flaps.

ELECTRIC SEALER works automatically and is used to heat-seal the cellophane bags that are without top flaps.

Cellophane Bags Call For New PACKAGING

► **Brown Hosiery Mills wraps 33% of its production in cellophane bags. To make a good job of packaging, the mill emphasizes—**

- **Correct-size bags**
- **Use of a special tray**
- **More care in knitting and dyeing**

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

Brown Hosiery Mills, Carrollton, Ga., has developed a speedy technique of packaging its products in cellophane bags. The technique uses a metal tray with an angled end. This method fits into the mill's production line and has eliminated the stuffed appearance of former methods of packaging.

Misses' and children's anklets are made in this mill, in sizes 6 to 11, in white and solid pastel colors.

The mill formerly laid out the anklets in a crisscross pattern and stuffed the pile into the cellophane bag. The anklets had a stuffed appearance and were apt to become disarranged as the package was handled.

How the Tray Is Fitted

To preserve the neatness of the merchandise, a metal tray was developed to act as a bag guide. The tray extends the width of the folding table, and one end extends off the table and angles downward.

The anklets are folded and arranged as they are to be in the bag. The cellophane bag is placed over the angled end of the tray, and the anklets are carefully slid into the bag. The size of the cellophane bag is such that the anklets will fit snugly and will be held in place during subsequent handling.

Bag Selection Is Important

Brown Hosiery Mills has found that the medium-weight 450-MST cellophane bag is sufficiently transparent to give the package an attractive appearance. This bag is strong enough to resist tearing during rough handling on the retail counter.

Sizes of the cellophane bag vary with sizes of anklets as follows:

Size of Bag (in.)	Size of Anklets
7x7	6-6½
7x8	7-7½
7x9	8-8½
7x10	9-9½
7x11	10-10½
7x12	11

Two styles of bags are used for packaging anklets. One style has a display top flap that is stapled, and the other style is sealed by the hot-seal method. Some bags are decorated around the

The Trend Is Toward Cellophane

An increasing number of knitted products are being packaged in cellophane bags. These products are being displayed in supermarkets and similar retail outlets. More attention is being directed by mills toward still greater public acceptance of these products.

SHIPPING BOXES contain six cellophane bags. A wide assortment of sizes and colors is included in each box.

Techniques

sides with attractive printed designs to enhance sales appeal.

A cardboard backing is placed in some of the cellophane bags to provide the bag with sufficient stiffness to stand upright in a rack or on the display counter.

Four or five anklets are placed in one bag, in white, solid colors, or an assortment of colors according to customers' specifications. Packing six bags in a box allows a wide assortment of sizes and colors on small orders.

Both first quality and irregulars are packaged in cellophane bags, but the seconds are plainly imprinted and put in plain bags without a guarantee. All first-quality products carry the mill guarantee.

How the Bags Cut Down Seconds

Cellophane bags keep the merchandise dirt and dust free and preserve sales attractiveness, but Brown Hosiery Mills has found that greater care in knitting and dyeing is required. The close inspection and attention to production details have contributed greatly to the reduction of irregulars and redyes.

More care is required in dyeing to insure fastness because the anklets are exposed to light. Brighter colors are obtained to catch the customer's eye by bleaching all anklets before dyeing.

OUTERWEAR Mill Cuts Pressing Costs 25%

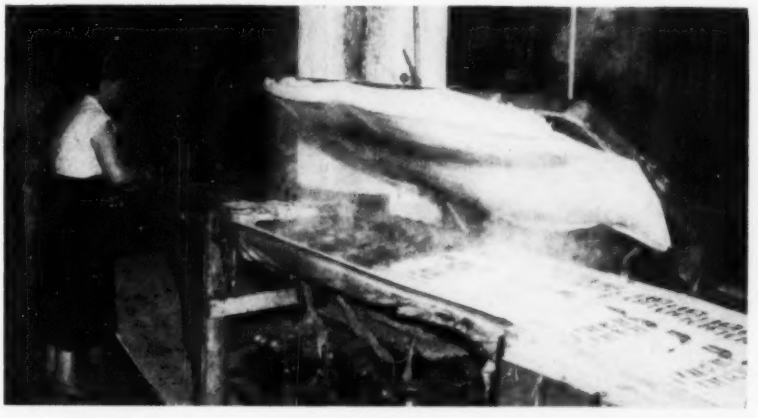
- ▶ Gloves and mittens are given a uniform press
- ▶ Three girls now do the work of four
- ▶ Time-sequence controller provides a safety device and makes easier work for the operator

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD

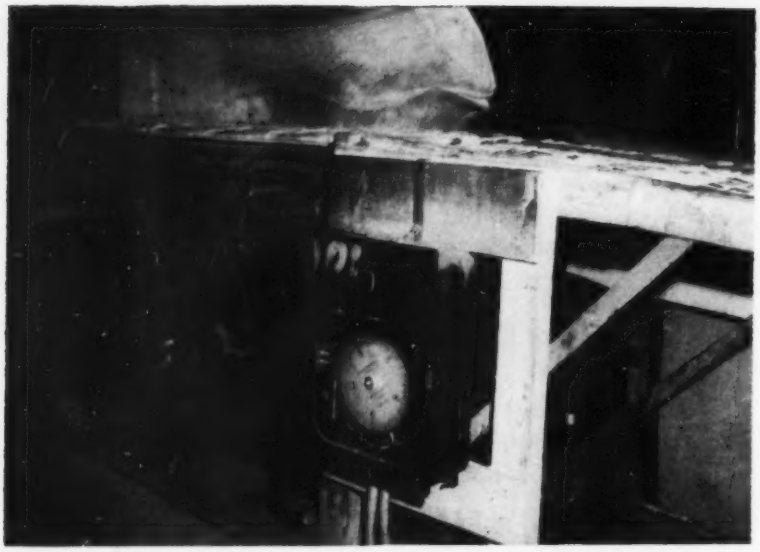
AN AUTOMATIC STEAM PRESS at Dorothea Knitting Mills, Toronto, Canada, has increased pressing production 30%. The machine, brain child of the company president, L. Borsook, was made from an old hand-controlled steam press.

In addition to saving time, this method of pressing gives a control far superior to that given by the original

GLOVES are stretched onto forms and laid on the bench at the end of the conveyor. Jean Goulet places the gloves on the conveyor belt.



THE PRESS BED RISES, and the canvas belt moves to the right. The belt stops when the next batch of gloves is below the press bed.



TIME-SEQUENCE CONTROL governs the temperature and length of the pressing cycle. The press bed lifts at a predetermined time on each batch of gloves.

PRESSED GLOVES AND MITTENS drop off the conveyor belt onto a table at the end of the belt. The gloves are stripped from the forms and laid out in batches.

A 1-HP. MOTOR under the machine drives the belt through a reduction gear. Pressed goods are stacked on another conveyor to be trimmed, examined, and paired.

hand method. Uniformity of pressure, time, and temperature is assured on every garment.

Fitted at each side of the press is an inclined table. A long, endless canvas belt rides over the tables and the steam-press bed. A 1-hp. motor underneath the delivery end of the belt drives the conveyor at slow speed through a reduction gear.

The movement of the belt is intermittent and is controlled from a push button when the belt is loaded to full capacity.

Hand Controls Are Removed

The hand controls of the press have been removed, and in their place an automatic time-sequence controller has been fitted. This controller gives a regulated steam-vacuum cycle. A safety device is also incorporated in the controller to bring the top bed of the press down in two stages. An operator having her hands close to the press when the top bed is to fall is given ample warning.

Three operators handle all Dorothea's production of gloves and mittens. One operator sits at the loading end of the conveyor belt. She stretches the gloves and mittens onto wooden forms as they are received from the loopers.

Another girl stands by the belt and places the gloves and mittens on the canvas. She tries to use a minimum amount of space. This girl operates the push button to start the cycle when the belt is fully loaded. A double push is given to the button if extra-heavy goods are to be pressed.

Gloves Are Steamed and Dried

The top bed descends, steaming and drying the garments between the beds. As soon as the top bed has lifted, the belt starts to move to the right.

The goods that have been placed in position by the push-button operator now take a position under the steam press.

The goods that have been pressed fall off the delivery end of the belt onto a table. Here the third girl removes the garments from the forms and piles gloves and mittens in their respective lots.

When a batch is received complete from the press, it is placed on another conveyor belt and passed along for further processing.

Plans are being made to build a conveyor to return the forms from the delivery end to the feed end of the machine. A constant supply of forms would then be assured at the feed end of the machine, and the third operator would be relieved of the task of returning the empty forms by truck to the feed end.

Time-Saving Tables for The SPINNING Overseer

► Gear changes are often wanted in a hurry. With a set of tables to provide the necessary information, an overseer can do his job without hurry and without making snap decisions. Here are some tables that can serve as a guide to the overseer's homemade handbook.

By N. H. POMFRET
Provincial Institute of Textiles

A SPINNING OVERSEER can compile a set of tables that will reduce change calculations to a minimum. Calculations are especially bothersome if small runs and sample yarns are frequent. Guessing at gear changes is a waste of time no matter how much experience an overseer has had, especially since the effects of these changes can be calculated within narrow limits.

Table 1 - Turns per In. for Yarn Numbers and Twist Multipliers

Yarn No.	Square Root	Twist Multiplier								
		3	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6
20	4.472	13.41	14.13	15.20	16.09	16.99	17.88	18.78	19.67	20.57
22	4.690	14.07	15.00	15.94	16.88	17.82	18.76	19.69	20.62	21.57
24	4.899	14.69	15.67	16.65	17.63	18.61	19.59	20.57	21.55	22.53
26	5.099	15.29	16.31	17.33	18 35	19.37	20.39	21.41	22.43	23.45
28	5.292	15.87	16.93	17.99	19.05	20.10	21.16	22.22	23.28	24.34
40	6.325	18.97	20.24	21.50	22.77	24.03	25.30	26.56	27.83	29.09

The first homemade table the overseer can make shows the turns per inch for all the possible twist multipliers he may need for the entire range of yarn numbers his department spins. This simple table is just a tabulation of the values calculated from the formula:

tpi. = Twist Multiplier $\sqrt{\text{Yarn No.}}$

It is particularly useful when used in conjunction with Table 2.

The twist gears necessary to get the correct turns per inch are listed in this table. A separate listing is made for each kind of frame that has a different twist constant.

A large number of twist constants are possible by changing the cylinder gear. To prevent possible error, these tables have been standardized for a 41-tooth and 51-tooth cylinder gear; so only two twist constants are used here.

Table 2 - Turns per In. for Each Twist Gear

Twist Gear	Turns per Inch	
	Twist Constant 1,000 Cylinder Gear 41	Twist Constant 804 Cylinder Gear 51
31	32.25	25.93
32	31.24	25.12
33	30.30	24.36
34	29.41	23.65
57	17.54	14.10
58	17.24	13.86

An example will illustrate the usefulness of these tables. Suppose you receive an order to spin 28s with a twist multiplier of 4.60. Table 1 shows that 24.34 tpi. are necessary for this job. From Table 2, you find that a 33-tooth twist gear (with 51-tooth cylinder gear) will give 24.36 tpi. So you have the correct twist gear without taking time to make the calculation.

A quick and accurate check to see if the right twist gear is being used can be made with this table. A column can be made for each standard spindle speed. With a 1-inch front roll, the values are easily calculated from the formula:

$$\text{tpi.} = \frac{\text{rpm. of spindle}}{3.1416 \times \text{roll speed}}$$

A constant will aid these calculations if you divide the spindle speed by 3.1416. For a spindle speed of 8,100 rpm., the constant would be 2,578. Then the turns per inch can be found by the formula: $\text{tpi.} = \frac{2{,}578}{\text{roll speed}}$

Table 3 - Roll Speed and Turns per In. For Standard Spindle Speeds
(1-in. front roll)

Roll Speed (rpm.)	Spindle Speed (rpm.)	Turns per Inch			
	Constant	7,400 2,355	8,100 2,578	8 400 2,673	9,120 2,903
110		21.41	23.43	24.30	26.39
111		21.21	23.22	24.08	26.15
112		21.02	23.01	23.86	25.91
113		20.84	22.81	23.65	25.69
129		18.25	19.98	20.72	22.59
130		18.11	19.83	20.56	22.33

(Continued on next page)

Table 4 - Hanks per Hr. at 100% Efficiency (1-in. Front Roll)

Roll Speed	Hours								
	1	2	3	4	5	6	7	8	9
110	0.685	1.371	2.056	2.742	3.428	4.113	4.799	5.485	6.170
111	0.691	1.383	2.075	2.767	3.459	4.151	4.843	5.534	6.223
112	0.698	1.396	2.094	2.792	3.490	4.188	4.886	5.584	6.282
113	0.704	1.408	2.112	2.817	3.521	4.225	4.930	5.634	6.338
114	0.710	1.421	2.131	2.842	3.552	4.263	4.973	5.684	6.395
115	0.716	1.433	2.150	2.867	3.583	4.300	5.017	5.734	6.451
116	0.723	1.446	2.169	2.892	3.615	4.338	5.061	5.784	6.507
117	0.729	1.458	2.187	2.917	3.646	4.375	5.104	5.834	6.563
118	0.735	1.470	2.206	2.941	3.677	4.412	5.148	5.883	6.619
119	0.741	1.483	2.225	2.966	3.708	4.450	5.191	5.933	6.675
120	0.747	1.495	2.243	2.991	3.739	4.487	5.235	5.983	6.731
159	0.991	1.982	2.973	3.964	4.955	5.946	6.937	7.928	8.919
160	0.997	1.994	2.991	3.989	4.986	5.983	6.980	7.978	8.975
161	1.003	2.007	3.010	4.014	5.017	6.021	7.024	8.028	9.031
162	1.009	2.019	3.029	4.038	5.048	6.058	7.068	8.077	9.087

An overseer can spend a lot of time calculating the production efficiencies of the machines; especially if the excellent habit of informing each section hand of the efficiency of his particular section has been developed. This work can be made easier and much quicker by Table 4.

This table is very easily calculated. With a 1-in. roll:

Hanks per hr.

$$= \frac{\text{front-roll speed} \times 3.1416 \times 60}{840 \times 36}$$

$$= \text{front-roll speed} \left(\frac{3.1416 \times 60}{840 \times 36} \right)$$

$$= \text{front-roll speed} \times 0.006233$$

The 1-hr. column can be found by multiplying the constant by the roll speed. The constant is the hanks delivered per hr. if the rolls made one revolution per min. Column 2 is twice the value of Column 1, Column 3 is three times the value of Column 1, etc.

Suppose it were necessary to find the efficiency of this group of frames:

No. of Frames	Roll Speed	Hours Run	Actual Hanks
5	116	38	128
6	120	40	163
9	110	40	231
10	112	40	256

For the five frames with 116-rpm. roll speed:

Frame Hr.: 5x38=190

From the table:

100% production 100 hr.= 72.3
90 hr.= 65.07
190 hr.=137.37

For the six frames with 120-rpm. roll speed:

Frame Hr.: 6x4=240

From the table:

100% production 200 hr.=149.5
40 hr.= 29.91
240 hr.=179.41

For the nine frames with 110-rpm. roll speed:

Frame Hr.: 9x40=360

From the table:

100% production 300 hr.=205.6
60 hr.= 41.13
360 hr.=246.73

For the 10 frames with a 112-rpm. roll speed:

Frame Hr.: 10x40=400

From the table:

100% production 400 hr.=279.2

The efficiency of all 30 frames= $\frac{100(256+128+163+231)}{279+137+179+246} = 92\frac{1}{2}\%$.

With practice, these simple calculations can be performed faster than it takes to read this illustration.

Table 5 - Production in Lb. per Frame Hr. at 100% Efficiency for Each Yarn Number

(for 1 rpm. of front roll) (324-Spindle Frame, 1 3/8-in. Roll)

Yarn No.	Hours								
	1	2	3	4	5	6	7	8	9
6	0.462	0.925	1.388	1.851	2.314	2.776	3.239	3.702	4.165
7	0.396	0.793	1.190	1.586	1.983	2.380	2.776	3.173	3.570
8	0.347	0.694	1.041	1.388	1.735	2.082	2.429	2.776	3.124
10	0.277	0.555	0.833	1.110	1.388	1.666	1.943	2.221	2.499
12	0.231	0.462	0.694	0.925	1.157	1.388	1.619	1.851	2.082
50	0.0555	0.111	0.166	0.222	0.277	0.333	0.388	0.444	0.499
52	0.0534	0.106	0.160	0.213	0.267	0.320	0.373	0.427	0.480
54	0.0514	0.102	0.154	0.205	0.257	0.308	0.359	0.411	0.462
56	0.0495	0.099	0.148	0.198	0.247	0.297	0.347	0.396	0.446

How to Use Table 5

Here is another useful table that a spinning overseer can easily and quickly tabulate. The table shown to illustrate the method is for a frame with 324 spindles and a 1⅜-in. front roll. The basis of the table is the production in lb. per hr. when the front roll makes one revolution per min.

For 1s, the production per hr. for 1 rpm. of the front roll is:

$$\frac{324 \times 1\frac{3}{8} \times 3.1416 \times 60}{36 \times 840 \times 1} = 2.7769$$

The production of 10s is one-tenth of this figure, the production of 20s is one-twentieth, and so on.

Suppose you had 15 frames on 50s running 80 hr. per wk. with a roll speed of 110 rpm. Suppose you were asked how long it would take to complete an order for 10,000 lb. of yarn. With this table, you could give the answer in about 2 min.:

Lb. production per frame hr. (from table = 0.0555 for one rpm. of roll

100 rpm. = 5.55
10 rpm. = 0.555

110 rpm. = 6.105

For 15 frames, hourly production = 6.105 x 15 = 91.575 lb.

Assuming 92% efficiency, actual production = 91.575 x 0.92 = 84¼ lb.

Hr. required to complete order = $\frac{10{,}000}{84\frac{1}{4}}$ = approximately 118 hr.

Suppose you needed to know the number of frames needed to complete an order of 25,000 lb. of 12s yarn. Assume the frames have a front-roll speed of 145 rpm. Let the working week be 80 hr.

Then the hourly production required is $\frac{25{,}000}{80} = 312.5$ lb.

From Column 1 we find: Production for 1 rpm. of roll = 0.231

For 100 rpm. = 23.1
(Column 4) 40 rpm. = 9.25
(Column 5) 5 rpm. = 1.157

For 145 rpm. = 33.507

Assuming 85% efficiency, actual production per hr. = 33.5 x 0.85 = 28.47 lb.

Frames required = $\frac{25{,}000}{28\frac{1}{2} \times 80} = 10.96$,

or approximately 11 frames.

Checklist of Government LABOR PUBLICATIONS

▶ This checklist is a compilation of U. S. Government publications on labor information of interest to the textile industry. The publications can be obtained by writing to the department listed, Washington, D. C.

By ROBLEY D. STEVENS, J.D.

DIVISION OF LABOR STANDARDS, U. S. DEPT. OF LABOR

	Booklet No.	
1.	123	Federal Labor Laws and Agencies
2.	81	A Guide to the National Labor Relations Act
3.	66	The Foremen's Guide to Labor Relations
4.	82	Arbitration of Grievances
5.	60	Settling Plant Grievances

WAGE AND HOUR DIV., U. S. DEPT. OF LABOR

1.	778	Overtime Compensation Explanation
2.	541	Definition Terms of Executive, Administrative, Professional and Sales Employees
3.	516	Recordkeeping for Employers
4.		Federal Wage-Hour Digest
5.	3	Rulings and Interpretations of Government Work
6.		Annual Reports

BUREAU OF LABOR STATISTICS, U. S. DEPT. OF LABOR

1.		Glossary of Wage Terms
2.	908–17	Collective Bargaining Provisions on Health, Insurance, and Pensions
3.	908	Collective Bargaining Provisions on Union Security
4.	908–2	Collective Bargaining Provisions on Vacations, Holidays and Week-End Work
5.	908–3	Collective Bargaining Provisions on Incentive Wages, Time Studies and Standards of Production
6.	908–4	Collective Bargaining Provisions on Learners and Apprentices
7.	908–5	Collective Bargaining Provisions on Discharge, Discipline, Quits, Dismissal Pay
8.	908–0	Collective Bargaining Provisions on Wage Adjustment Plans
9.	901	Directory of Labor Unions

NATIONAL LABOR RELATIONS BOARD

1.		A Guide for Labor Organizations—Compliance with Section 9(f)(g)(h) of the LMRA, 1947
2.		Rules and Regulations—Statements of Procedures
3.		Annual Reports

FEDERAL SECURITY AGENCY

1.	6	Staff Development, the Supervisor's Job
2.		Your NEW Social Security, 47 Questions and Answers
3.		Annual Reports

BUREAU OF APPRENTICESHIP, U. S. DEPT. OF LABOR

1.		Apprenticeship—Past and Present
2.		Setting Up an Apprenticeship Program
3.		Apprenticeship Credit for Previous Experience

FEDERAL MEDIATION AND CONCILIATION SERVICE

1.		Annual Reports

BUREAU OF THE BUDGET, OFFICE OF THE PRESIDENT

1.		Production Planning and Control in Office Operations
2.		Simplifying Procedures Through Forms Control
3.		Personnel Records and Control
4.		Fiscal Records and Control
5.		Property Records and Control
6.		Records Retirement and Control

DEPT. OF COMMERCE

1.		Monthly Economic Indicators
2.		Annual Reports

EACH OPERATOR does her own weighing on a direct-reading floor scale next to the pin drafter. The weights of the two cans from the two-headed delivery are tabulated, added, and plotted directly on the control chart. No conversions or interpretations are necessary.

Sum Chart at Rochambeau Worsted Controls SLIVER VARIATION

▶ Each pin-drafter and gill-box sliver can used as a weigh box at Rochambeau Worsted has its own control chart. Each operator keeps the chart for her machine. Control limits are based on experience, and a prepared chart form makes preparation, tabulation, and control simple and easy.

By LOUIS F. PAYETTE Quality-Control Technician, Rockambeau Worsted Co.

At Rochambeau Worsted Co., Providence, R. I., we use a sum control chart in our gilling and pin-drafter operations to control variation. A gear change often introduces more variation. With this control chart we can tell at a glance if a gear change corrected an out-of-control point.

Besides providing a spot check for the supervisors, the chart method is much easier for the operators than the old method of matching cans. The operators like the chart because its use gives them a sense of responsibility and prestige. Also, one operator reported, "I didn't know what a gear change meant until I started using the sum chart. Now I see what happens to the work. The chart is simple and easy to use."

How the Chart Is Used

The cans, which are equalized with solder, are weighed on a direct-reading floor scale. The scale is located at the side of the pin drafter or gill box. Each operator does her own weighing, and she keeps the control chart at the scale. She is kept posted of lot changes on her machine.

The chart is checked by the overseer several times while a lot is in process. When a lot is completed at the weighing operation, the chart is given a final check by the departmental overseer. The completed charts are kept on file in the quality-control laboratory.

All data necessary for the control chart are tabulated on one form. At the top of this sheet, general

ROCHAMBEAU WORSTED CO., Providence, R. I.

Pin Drafter - Sum Chart

Lot 1100 Blend D.S. 100% Wool

Gr. wt. per yd. 131 Yd. per can 1200 Date 9/22/52

No. 1	22¼	22¼	23	22	22½	22½	22½	22¼	22	22¼	22½	22	22¼	22½	23
No. 2	22½	22½	22¼	23	22¾	22½	22¾	22¼	22	22¼	22½	23	22¾	22	22
Sum	44¾	44¾	45¼	45	45¼	45	45¼	44¾	44	44¾	45	45	44¾	44½	45

0															
1/4															
1/2															
3/4															
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1/4															
1/2															
43 3/4															
44 0															
44 1/4															
44 1/2														X	
44 3/4	X	X						X		X			X		
45 0				X		X					X	X			X
45 1/4			X		X		X								
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0															

AN "X" OUTSIDE the control limits indicates that the process is out of control. The gear change necessary to bring the process back into control is based on experience. The next doff shows that the gear change made here was successful.

information is entered in prepared spaces for easy identification.

The weights of the cans from the two-headed unit are tabulated in the squares and then are added to get the sum. This figure gives a better control of variation than the average of the weights would because the variation is magnified. The sum of each two-can doff is plotted directly below in the same column on the control chart.

We print only the quarter pounds on the control chart; so the chart can be used for any range of weights by writing in the appropriate whole numbers alongside the fractions. The only other step necessary is to rule in the control limits. Write the weights in the left-hand column, rule in the limits, and you are ready to use the charts.

How To Get the Limits

The most important factor to consider in limit setting is the grain-weight-per-yard variation of the processed material. For instance, the limits for a wool-and-cotton blend would not be as close as for a 100%-wool set of drawing.

For the set of drawing shown on the control sheet, we used the first five doffs to figure the average gross weight per can at the doff. (These five doffs are the first 10 weights in the tabulation squares.) The average weight figures out to 22½ lb. per can. The average weight per doff is, therefore, 45 lb. This number is used as the midpoint on the control chart. The row of midpoint squares can be given a heavier outline for easy checking.

The control limits for the chart depend on the tolerance allowed for the particular lot. A formula can be set up to give the grains-per-yard equivalent of the pounds-per-doff allowance:

$$\frac{\text{Process Limit}}{\text{Yd. per can} \times \text{No. of deliveries}} = \text{Tolerance}$$

For this set of drawing, we allowed a ±½-lb. process limit. The control sheet shows that the yardage counter was set for 1,200 yd. per can. From the formula $\frac{(3500 \text{ gr.})}{(2400 \text{ yd.})}$, the tolerance is ±1.45 gr. per yd. of sliver. The sliver was running at 131 gr. per yd., as also shown at the top of the chart form.

Cotton Research Clinic Studies Fiber Behavior

- Over 50 mills were represented at the fourth annual Cotton Research Clinic held in Savannah, Ga., late in February. The Clinic, sponsored by the National Cotton Council, was an outstanding success.
- The 200-plus registrants heard of the latest developments in cotton-fiber testing and in preliminary mill processing. Two new testing instruments were shown—the Stelometer and the Clemson Flat Bundle Tester.
- This report covers the material on fiber testing only. The sessions on fiber processing will be summarized in the May issue of TEXTILE WORLD.

"Doughnut" Cotton Fibers May Cause Poor Spinning

▶ Cottons that have passed all preliminary tests often do not spin well. Uncollapsed or "doughnut" fibers may be the answer. The only remedy is to remove the offending bales.

By T. L. W. BAILEY, JR.,
Institute of Textile Technology

NORMAL FIBERS are irregular in shape and size, but the cell wall has been collapsed in every case.

DOUGHNUT FIBERS are cylindrical and show no evidence of collapsing. Even a few such fibers can affect spinnability.

IF YOU ARE TROUBLED with high ends down, excessive fly, weak yarn, and work running light—and if your yarn appearance is still good—your trouble may be "doughnut" fibers. Our basis for this statement is 400 trouble reports from member mills. We found doughnut cotton in every case.

Cause Is Unknown

We don't know what causes doughnut fibers, but we do know that we've found them from every area of growth and every year. Some years are worse than others: the excessive fly in the '52 crop has been definitely traced to this cause.

Doughnut fibers are tubular in cross-section. Longitudinally they show no convolutions. It is little wonder that this hair-like cotton behaves differently or causes an entire blend to misbehave.

Remedy Is Simple

There's just one sure remedy if you find doughnut fibers: Remove the offending bales from the mix. Even if the cottons have been carefully screened and have passed all the other tests, your spinning troubles may disappear if you eliminate the doughnut cotton.

The Stelometer-- It Measures Fiber Strength and Elongation

- **The pendulum bob of the Stelometer stands still while the axis moves**
- **Rate of loading is controlled pneumatically**
- **Possibilities for operator variations are minimized**

By **KENNETH L. HERTEL,** Fiber Research Laboratory, University of Tennessee

THE STELOMETER measures fiber strength and fiber elongation. Pressley jaws are used, and the method of loading is opposite to that found in most pendulum-type instruments—the pendulum bob stands still.

NO LONGER IS THE measurement of fiber strength itself sufficient as a fiber property to help relate fiber data to yarn and fabric data. Fiber extensibility or elongation is receiving much more attention, and there is a need for an instrument that is better controlled than the Pressley and that gives breaking extension as well as breaking strength. We believe we have the answer in the Stelometer (strength-elongation meter).

The Stelometer was developed under a contract with the U. S. Dept. of Agriculture and supervised by the Southern Regional Research Laboratory of the Bureau of Agricultural and Industrial Chemistry.

How It Works

The Stelometer is a pendulum-type instrument with two lightweight indicators that follow the position of the weight and stop at the breaking point. Both indicators rotate about the same fixed axis.

The force indicator gives the angle that the pendulum makes with the vertical. The extension indicator magnifies that portion of the pendulum's motion that represents the jaw separation and is read with respect to the force indicator. In order that the indicators stop at break, the pendulum is mounted in a frame that rotates about an axis coincident with the indicator axis. Contrary to most pendulum instruments, the pendulum axis itself moves through an arc while the pendulum bob remains about at the center of rotation of the frame.

Pressley jaws are presently used to hold the sample. One of the Pressley jaws is held in a fork that is an extension of the pendulum above its axis of support. The other jaw is held in an extension of the rotating frame. As the pendulum and its supporting frame are rotated from the vertical toward the horizontal, the force tending to separate the two jaws is increased. Loading speed is ½ kg. per sec., based on 20 sec. to break.

The two indicators rotatable about the axis of rotation of the pendulum frame are actuated by the pendulum. If the fiber sample were inextensible, the indicators would rotate together at the same rate of speed as the frame. At break the pendulum would suddenly drop and disengage the small cams on the indicators. Friction stops the light indicators. For an actual extensible sample, the pendulum bob moves with respect to the frame and a component of this movement is magnified to give a measure of extension. Another component gives the proper correction for the force indicator.

The force indicator must maintain a constant angle with the extension indicator for all positions of the frame. As long as the pendulum moves slowly from its initial position, it continues to push both indicators and indicate the amount of force in the sample and the extension of the sample. If the jaws separate too rapidly and cause the pendulum to drop too fast, the pendulum loses contact with the indicators and they stop. This condition occurs at break.

This limiting condition can be exceeded in very extensible samples, such as nylon or wool, even without breakage. The small pin on the pendulum, which actuates the indicators,

(*Continued on page 258*)

How Storage and High Gin-Drying Temperatures Affect New-Crop Cotton

- **The poor initial spinnability of new-crop cotton can be overcome by storage for 2 to 3 mo. after picking, either as seed or bale cotton**
- **Excessive gin-drying temperatures are detrimental to both fiber length and strength**

By **JACK COMPTON,** Institute of Textile Technology

THE FOLLOWING TEN POINTS summarize the results obtained at ITT on specially handled lots of "green" new-crop cotton. (The tests were run at the time of the 1951 crop.)

1. Storage alone has no apparent effect on fiber length array, uniformity ratio, or strength.

2. Excessive heat in gin drying causes a slight decrease in staple length array and a slight increase in irregularity of fiber length and has no effect on fiber strength, drag, or stiffness.

3. Neither the storage nor the gin-drying temperature has a significant effect on the percentage of mill waste.

4. Neps in the card web decrease with storage, but excessive gin-drying temperature apparently did not affect neps.

5. Storage for 2 to 3 mo. after picking as baled ginned lint results in a definite decrease in ends down during spinning when both low- and high-temperature gin-drying conditions are employed. No significant difference is found in spinnability of low- and high-temperature gin-dried cotton, so the better spinning must be attributed to storage alone.

(*Continued on page 260*)

How Cotton-Fiber Properties Affect Yarn Strength

▶ Variations in fiber elongation account for a 30% loss in potential yarn strength

▶ Only 60 to 70% of the fibers in a yarn break in a yarn-strength test

▶ Twist affects yarn strength by changing the effective gauge length of the fibers in the yarn

By **HELMUT WAKEHAM**, Textile Research Institute

WE KNOW SOME FIBER FACTS and some yarn facts, and the big job is to correlate the two sets of facts. A study of yarn structure from an analytical standpoint helps us to understand this relationship and to learn how fibers behave in yarn.

Fiber Facts

▶ Not only does single-fiber strength vary, but elongation also does. This variation in elongation may be the next fiber property that will be measured in an attempt to more accurately predict yarn and fabric behavior.

▶ Gauge length and crimp affect fiber results greatly. It is perhaps not so widely known that changing gauge length does not appreciably alter the stress-strain relationship of the fiber; it merely alters the point at which the curve is terminated.

▶ The great variability in the fiber properties of breaking elongation, breaking load, and breaking stress can be expressed as a coefficient of variation (40 to 50%); but the range is more striking when you realize that the highest value of any of these properties is more than twice the average, and the lowest value is close to zero.

▶ In a conventional Pressley test the effective gauge length is about ⅜ in., not zero. You can see this by examining the fiber ends sticking out of a broken bundle.

Yarn Facts

▶ Only 60 to 70% of the fibers in a yarn break in a yarn-strength test. Most of the other fibers have ends near the point of break, and these ends just pull out.

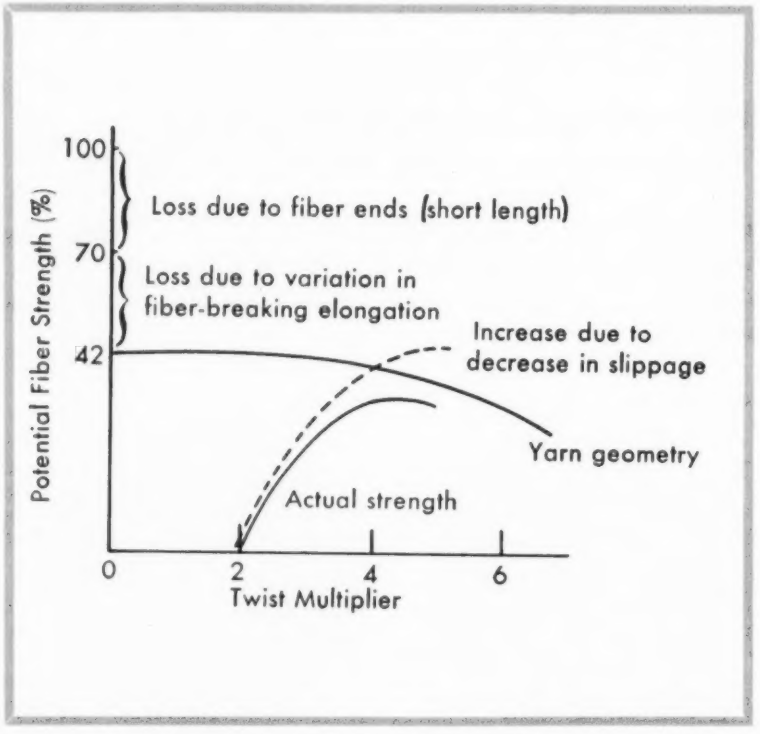
▶ Yarn strength depends on average fiber strength and also on variations in fiber length, strength, fineness, and elongation.

▶ Twist binds fibers together so that stress can be transferred along the length of the yarn. Binding the fibers this way makes them behave as if they were being stretched at a shorter gauge length. The higher the twist, the shorter the apparent gauge length and the higher the strength the fiber can contribute to the yarn. One of the most important consequences of our statistical study of fibers in yarn structure is the definition that this change of fiber properties is a function of yarn environment.

▶ Cotton fibers in optimum-twist yarns behave as if they were being stretched at very short gauge lengths, possibly less than 1 mm.

▶ The spinner's rule (tpi. equals the twist multiplier multiplied by the square root of the yarn number) holds true for very short sections of yarn as well as for long sections. Thin places are stronger because the yarn number is higher.

▶ Local yarn strength is only approximately related to local yarn number. This relationship, however, is almost nonexistent in a poor yarn.



FIBER-TO-YARN EFFICIENCY is summarized in this diagram. The familiar curve of yarn strength vs. twist multiplier is actually made up of the several effects shown: a 30% loss from fiber ends, another 30% loss from variations in elongation, some loss from yarn geometry, and an offsetting gain from the decrease in slippage and the decrease in gauge length that accompanies greater twist.

Why Yarn Strength Is Relatively Low

We are still translating into yarns only a fraction of the potential fiber strength.

There's roughly a 30% loss in yarn strength due to fiber ends pulling out.

Another 30% of the potential is lost from variations in fiber elongation.

And there is a further loss caused by yarn geometry.

The only offsetting gains we have, when strength is plotted against twist multiplier, are the increase in yarn strength due to the decrease in fiber slippage at higher twists, and the decrease in effective gauge length that means greater yarn and fiber strength.

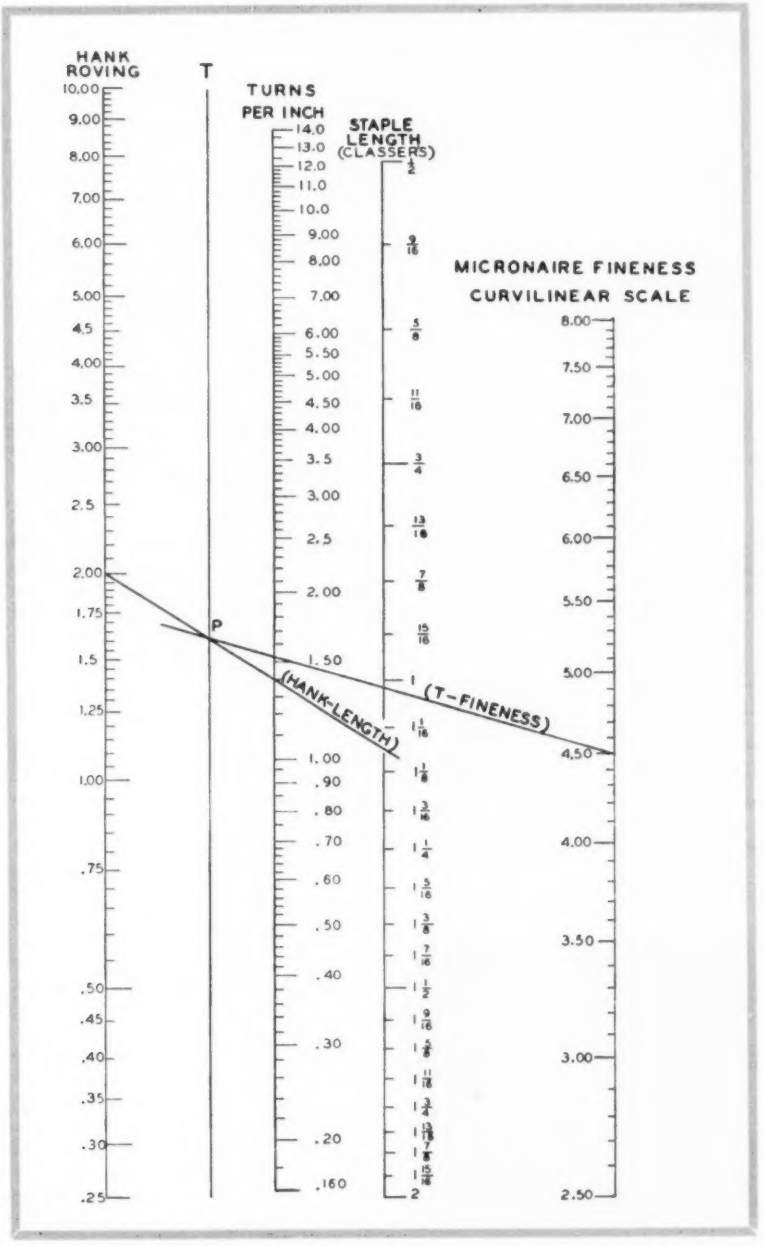
The combination of the three losses and the two offsetting gains summarized above results in the familiar curve that shows how actual yarn strength increases with increased twist up to a point and then falls off.

New Formula for Roving Twist Includes Fineness Factor

By JAMES R. CORLEY
Southern Regional Research Laboratory*

► The new formula takes into account hank roving, staple lengt', and fiber fineness

► More twist is needed for coarse fibers to get equivalent drafting qualities if all other properties are the same



TO GET ROVING TWIST, join hank roving with staple length and mark the spot *P* where that line intersects the reference line *T*. Then connect *P* with the fineness and read tpi. directly. The example assumes 2.00-hk. roving, 1 1/32-in. staple length, and fineness of 4.5, to require 1.53 tpi.

FOR MORE THAN 18 MO. we have been using a new formula to determine the amount of twist to put in roving to insure uniform drafting resistance. Our formula is based on hank roving, staple length, and fineness.

The new formula has been used to make rovings of 0.50 to 10.0 hk. A nomograph has been drawn to expedite the otherwise tedious calculations necessary.

How the Relationships Were Established

The independent effects of hank roving, length, and fineness on twist were established from three groups of rovings processed from carded cottons as follows:

Lot 1. For the relationship of hank roving to twist, we used a cotton of average fineness and length (Deltapine, 4.3 fineness on the curvilinear scale, 1 5/32-in. median staple).

Lot 2. For the relationship of staple length to twist, a variety of long-staple cotton was cut to form mean upper-half lengths.

Lot. 3. For the relationship of fineness to twist, four cottons of different degrees of fineness were cut to a common mean length (0.72 in.).

How the Formula Was Then Developed

From the three lots described above we found that tpi. varies directly with the hank roving to the two-thirds power, inversely as the length, and directly as the square root of the fiber fineness.

Since the fineness and length values had been based on a cut cotton, the ultimate formula had to be adjusted (with a constant) to an uncut-cotton basis.

The general formula, applicable to all carded cottons, is:

$$Y = \frac{.50\,(F)^{\frac{1}{2}}\,(X)^{\frac{2}{3}}}{L}$$

Where Y = tpi.
X = hank roving
F = Micronaire fineness (curvilinear scale)
L = classer's staple length

For combed cottons you can determine a new constant or figure tpi. on a proportion basis.

The Belger roving tester was used in our work to measure the uniformity of drafting resistance.

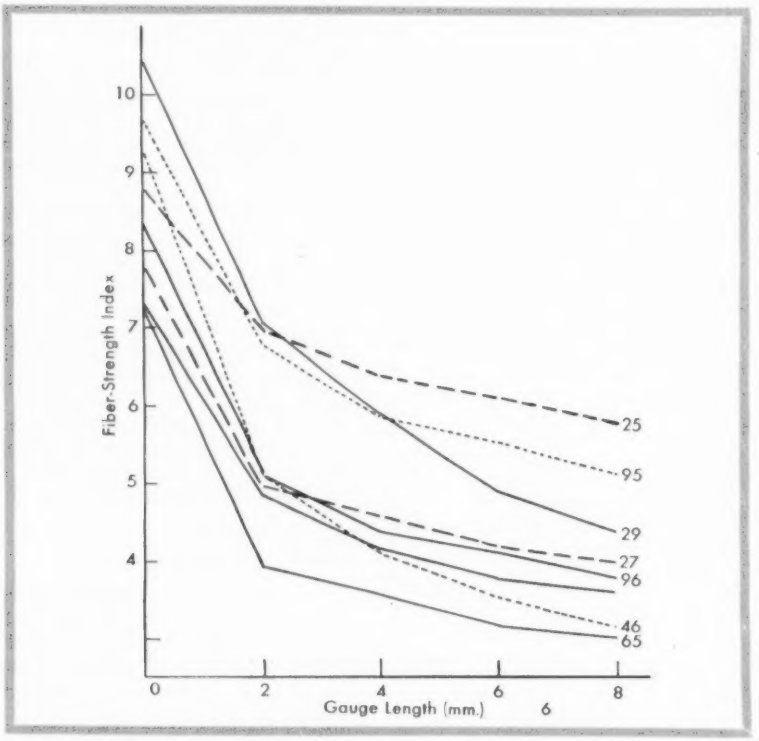
* *One of the four regional laboratories of the Bureau of Agricultural and Industrial Chemistry, USDA.*

Short Gauge Lengths Can Unfairly Rate Fiber Strengths

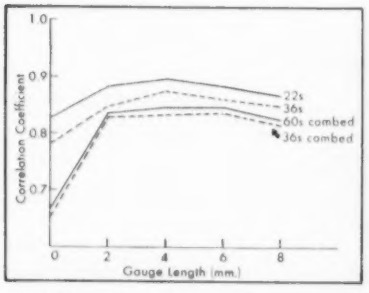
Two Schools

- **A gauge length of 2 to 4 mm. in fiber testing gives a better estimate of yarn strength than does zero gauge length**
- **The Clemson Flat Bundle Tester, a new fiber-testing machine, makes possible accurate and fast changing of gauge length**
- **"Gripping length" in the yarn is more important than gauge length**

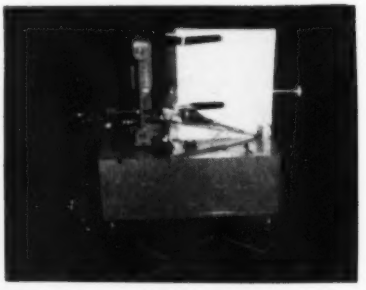
By **HUGH M. BROWN,**
School of Textiles, Clemson College



UNFAIR RATING of cottons at zero gauge length is shown in this chart. Sample No. 46, for instance, was the third strongest at zero; but at 4, 6, and 8 mm. it rated second to the bottom in the group. On the other hand, notice how No. 25 improved its relative position at greater gauge lengths.



CORRELATION of single-end yarn strength to fiber strength is plotted here against gauge length. Correlation is better between 2 and 4 mm. than at zero, but no further improvement occurs at greater gauge lengths.



CLEMSON FLAT BUNDLE TESTER uses conventional Pressley jaws but keeps the pendulum bob in one position while the axis rotates. The unit, manufactured by Scott Testers, Inc., records both strength and elongation.

OUR TESTS SHOW THAT for practically every type of single yarn there is better correlation between fiber strength and yarn strength when the fibers are tested at 2- or 4-mm. gauge length than at zero gauge length. We therefore feel that some cottons may have been unfairly rated on data gathered only at very short gauge lengths.

"Gripping Length" Is the Important Factor

From the geometry of a yarn and the mechanics involved in the yarn break, it would be very suprising if the fibers broke as if they were gripped at points as close as in the Pressley test.

Some cottons lose strength more rapidly with increase in gauge length than others, so it is important to know the equivalent "gripping length" as fibers are broken in a yarn. Possibly some cottons rated lower on the Pressley test and discarded should have been retained since they would make stronger yarns than some cottons rating higher by the Pressley test. It is strange that this situation was not thoroughly investigated before the Pressley test was generally accepted.

New Clemson Tester Was Used in Fiber Tests

The breaks for our tests were all made with the same set of jaws on the Clemson Flat Bundle Tester. Each cotton was run at all five different gauge lengths (0, 2, 4, 6, and 8 mm.) before we went to the next cotton; so the tests at the several gauge lengths should be under essentially identical conditions. This procedure was made possible by the fact that the gauge length can be changed instantaneously on the Clemson tester.

All tests were run at standard atmospheric conditions and corrected to measurements made on a check lot of cotton, which was run before each test cotton. Ten tests were made on each cotton instead of the usual six. All the yarns were also tested on the IP2 machine by two men following ASTM Standards running 25 breaks in each test. For each yarn number for both carded and combed cotton, the yarn strengths were plotted against the fiber strength at the several gauge lengths.

of Thought ▸

The coefficients of correlation were then computed and plotted against the gauge lengths. For practically every single type of yarn the correlation is from 8 to 27% higher for 2- or 4-mm. gauge lengths than for zero gauge length. This condition seems to indicate that in yarn breaks the fibers were broken as if they were gripped at points 3 to 4 mm. apart.

Longer Gauge Lengths Approximate Yarn Conditions

Our results indicate that the equivalent "gripping distance" on the fibers in yarn is considerably more than the short distance in the usual Pressley test. This greater distance also seems much more in line with what would be expected from the way fibers are locked in a yarn. The fibers alternate from the core of the yarn to its surface, and probably several of these alternations are necessary to grip an individual fiber sufficiently well to break it. Surely the holding force will be distributed some distance along the length of a fiber.

Pilot-Plant Tests Show Zero Gauge Length Best

▸ Yarn strength is more accurately predicted from fiber strength at zero gauge length than from fiber strength at any other gauge length

▸ A nomograph based on zero gauge strength, fineness, and staple length gives a quick way to estimate break factor

By **GEORGE W. PFIEFFENBERGER,** Chicopee Mfg. Corp.

WE HAVE FOUND better correlation strength and yarn strength when the fiber-testing gauge length is zero than when it is 2.5 or 5.0 mm. This condition is true for both skein and single-end yarn strengths, based on pilot-plant tests.

It is true that fiber strength decreases as gauge length increases; but the point to remember is this: Which fiber strength gives the most reliable estimate of yarn strength?

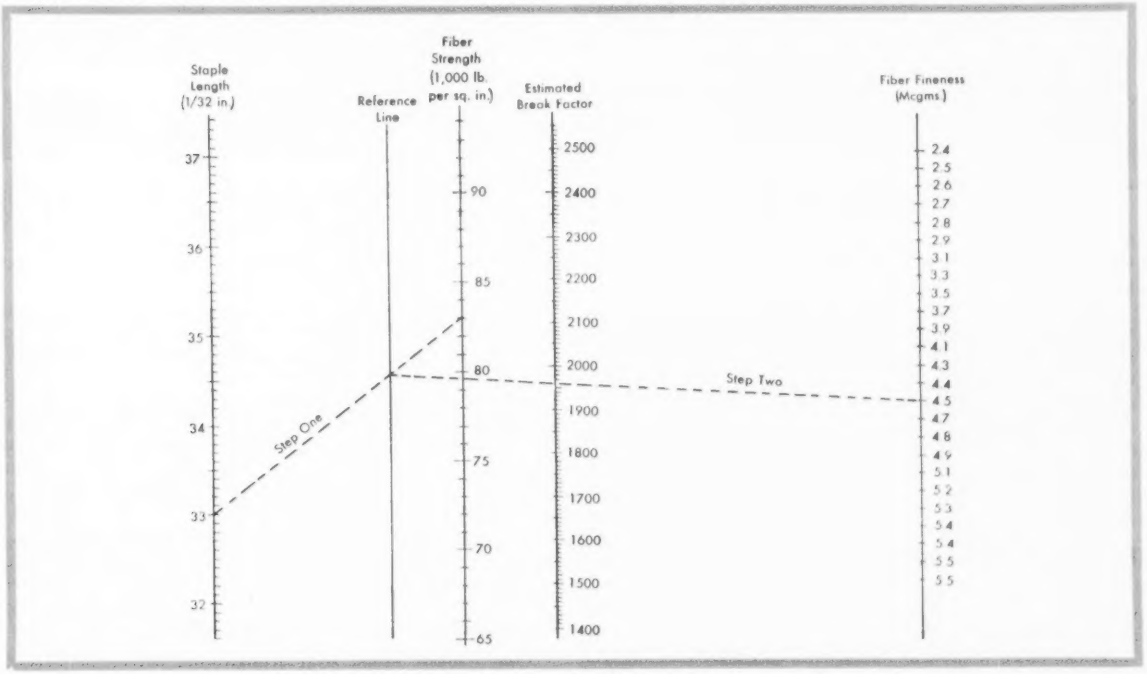
The conventional Pressley tester (latest model) was used in all our work.

How We Predict Break Factors

We have developed a formula, illustrated by the accompanying nomograph, to estimate break factors from staple length, fiber strength (based on zero gauge length), and fiber fineness. This formula makes it possible for us to blend to achieve any desired yarn strength, and strength is constant from lot to lot.

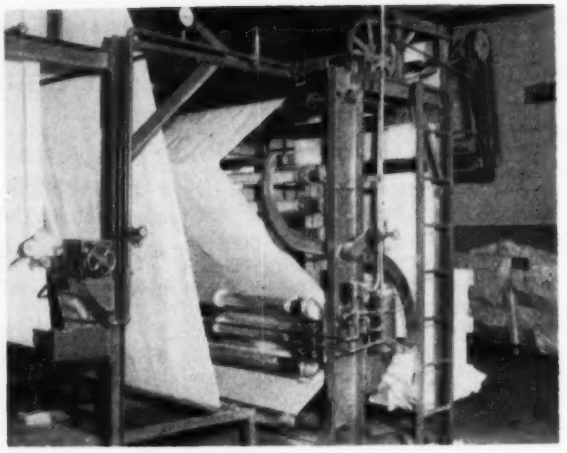
Staple length is considered at the 25% point, in conformity with government staple-length measurement. Fineness is by Micronaire. Strength is by Pressley test.

Different mills or laboratories may come out with different levels of yarn strength, but the relative effects of the fiber properties should hold true under uniform conditions.



LENGTH, STRENGTH, AND FINENESS are used in this nomograph to estimate the break factor of 30s warp yarn spun with a T.M. of 4.60. The example illustrates how the nomograph can be used: Draw a line from staple length (33/32 in this case) to fiber strength (83,000 psi.). Note where this line intersects the reference line. Now draw a line from this reference point to fiber fineness (4.5 micrograms), and this second line intersects the break-factor line at the value (1961) you should get for 30s warp from that cotton.

DUST REMOVAL from the gray cloth is accomplished by this vacuum cleaner at the batcher; thus dust and lint are kept to a minimum, operator comfort to a maximum.



SINGEING of face and back may be performed continuously or batchwise. Ports in the walls provide entrance and exit for the cloth but keep singeing fumes confined to the room.

Flexibility Aids Efficiency in Dyeing And Finishing SYNTHETIC BLENDS

► **With emphasis on balance of equipment and efficient layout, Bishopville Finishing Plant is prepared to handle all blends of rayon and other man-made fibers.**

By **GEORGE M. MOISSON,** Assistant Editor, TEXTILE WORLD

The Reeves Brothers, Inc., finishing plant is part of a plan designed to integrate all steps in the production of cloth. Reeves believes that uniformity of product can be obtained best when all steps are controlled by one management.

Flexibility within the plants lends flexibility to the system. With this premise in mind, the company has equipped the Bishopville, S. C., plant to handle long continuous runs of one type of cloth or to conveniently handle a variety of small lots of various blends.

The company has for years been identified mostly with cotton goods. Now that the demand for rayon blends has risen, the company has built up a line of goods designed for definite end uses, placing special emphasis on style and utility.

Production Line Is U-Shaped

A U-shaped production line receives gray goods on one end of the shipping platform and returns packaged goods at the other end.

As the cloth is opened for batching, it passes through a vacuum cleaner to remove loose lint and dirt. This step improves the working conditions so much that the women inspectors no longer complain of dust. The final-inspection perches are adjacent to the batching area.

From the batcher, the cloth travels through a port in the wall to a singeing machine where both faces of the fabric are singed simultaneously. Cloth styles that have to be desized are then padded with an enzyme solution and kept rolled until the starch has been digested.

Two Hinnekens boil-off machines, each equipped with a new-type wash box for final rinsing, follow. The new wash boxes use a spray-type backwash to remove residual tint and detergent.

The two Hinnekens units keep the double line of Glasco dyebecks supplied. Each of the 20 becks is supplied with brine meters and hot water lines from a 100,000-gal. supply.

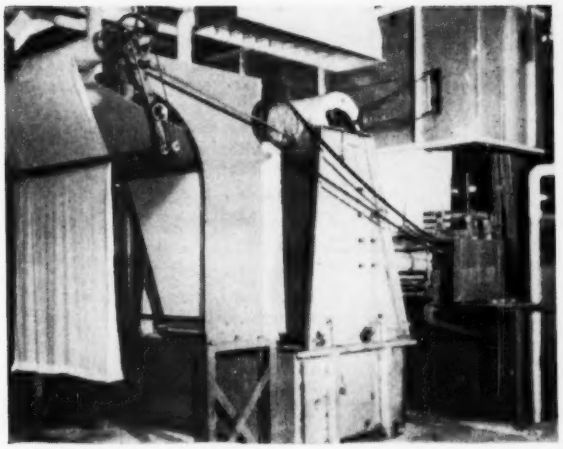
One automatic detwister unit handles all the production of the 20 becks.

A National Duplex dryer is used for drying before resin treatment and for curing. As the name suggests, two ends are fed in the dryer simultaneously.

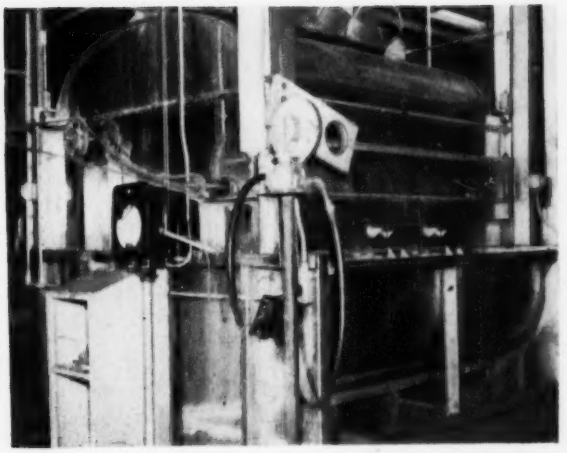
Two Tenters, One Weft Straightener

One Mount Hope weft straightener serves to handle all the production for two pad-tenter ranges, one of which is a clip tenter, the other a pin tenter with overfeed.

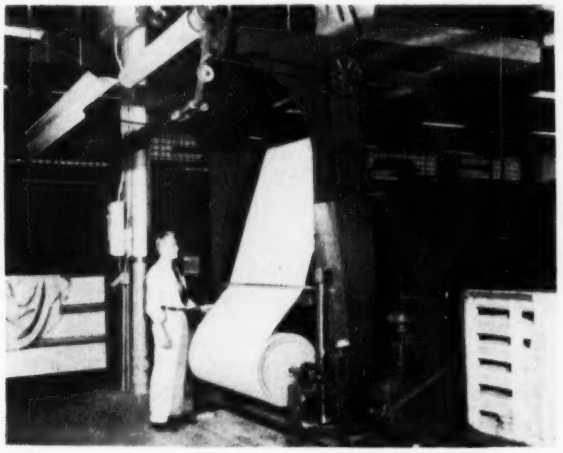
All production of both resin-pad ranges is washed, after curing, on a Rodney-Hunt Tensitrol washer equipped with



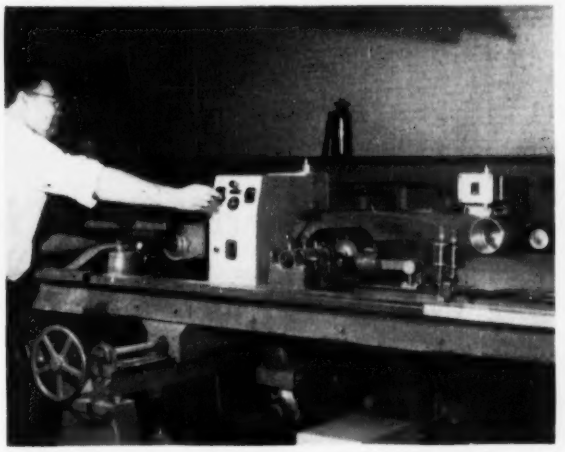
WASHING to remove traces of detergent and residual tinting colors is performed continuously by this spray-type washer in tandem with a boil-off unit.



DYEING in rope form is done in dyebecks equipped with brine meters and hot-water lines from a 100,000-gal. storage tank. Each beck has time-temperature controls.



INSPECTION of cloth as it leaves the tenter provides a productive job for the doffer, who usually just waits for the frame to doff. Some potential reworks can be caught here before resin is applied.



OVERFEED is provided for and controlled during drying (after resin padding) by a positive overfeed and selvage guider. This unit is installed on the pin frame only.

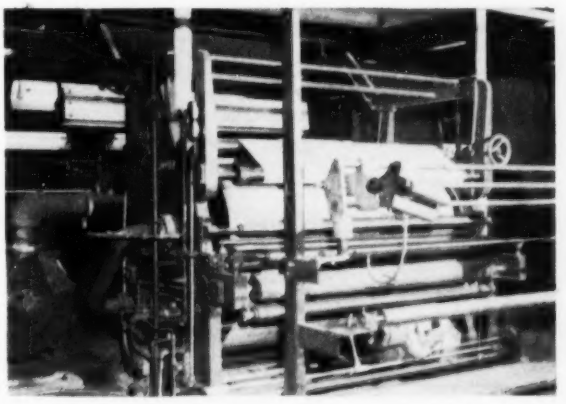
a RangeDrive A-C unit. This RangeDrive unit uses alternating current and eliminates the need for an a.c.-d.c. converter. The unit is made by Reeves Pulley Co., Columbus, Ind.

The Marshall & Williams pin frame has the new positive overfeed and selvage guider that helps considerably to control residual shrinkage.

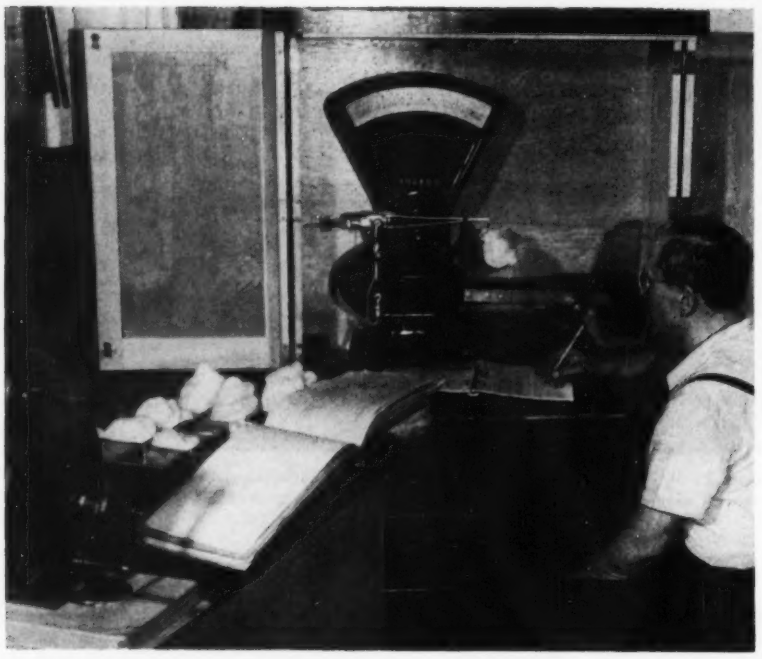
A Verduin endless-blanket decatizer is used to put the final finish on many styles of cloth. The machine is designed for 55-yd.-per-min. operation on spun rayons and light worsteds. A 1,400-cfm. flow of steam through the cloth is maintained by an Allen Billmeyer blower. This steam is discharged to the atmosphere.

A Carrier-engineered air-change system with automatic control units serves to keep the atmosphere pleasant and free of steam. All steam-producing machinery is hooded to exhaust as much moisture and fumes as possible from the plant.

Automatic electric-eye controls are installed on all finishing machinery.



DECATIZING is a continuous operation with this endless-blanket machine. Steam, supplied at 55-lb. pressure, is sucked at 1,400 cfm. through the cloth, which moves at speeds up to 55 yd. per min.



Wamsutta Mills, New Bedford, Mass., is almost a 100% combed-cotton mill with about 30 active yarn numbers ranging from 15s to 105s, and fabrics ranging from organdies to heavy industrial fabrics.

Control charts are used on:

1. Ribbon laps
2. Draw-frame sliver
3. Roving
4. Yarn numbers and strength
5. Gray- and finished-cloth tensile strengths and weights
6. Accident frequencies
7. Departmental waste

TESTING AND CONTROLLING of the ribbon lappers and drawing frames are done by the production staff. The machines are sampled every 4 hr., and the results are plotted on the average and range charts. If the chart looks out of line, an immediate retest is made before the gears are changed.

Wamsutta Follows Through On Its QUALITY CONTROL

HIGHLIGHTS: The control department computes control limits and prepares charts, but Wamsutta keeps testing and controlling as close as possible to the processes—Ribbon lappers and draw frames are tested and controlled by the card room—For yarn and roving, "out-of-control" points are circled in red—Final decisions for machine changes are made by a production man—Daily and weekly reports are made.

WAMSUTTA MILLS

From: H. King

Subject: SPINNING CHANGES

Day: Wed. Date: Nov. 26

Number of Changes: (1)

We have changed the gears on the following yarn numbers today:

Yarn Number	Mill No.	Roving	Twist	No. of Frames	No. Teeth Lighter	No. Teeth Heavier
52CH	6	4.50	4.50	3		1 tooth

THIS REPORT FORM helps to coordinate quality control in the spinning room at Wamsutta. Before a change is made on a spinning frame, the spinning room checks to see if corrective action has already been taken on the corresponding roving frames.

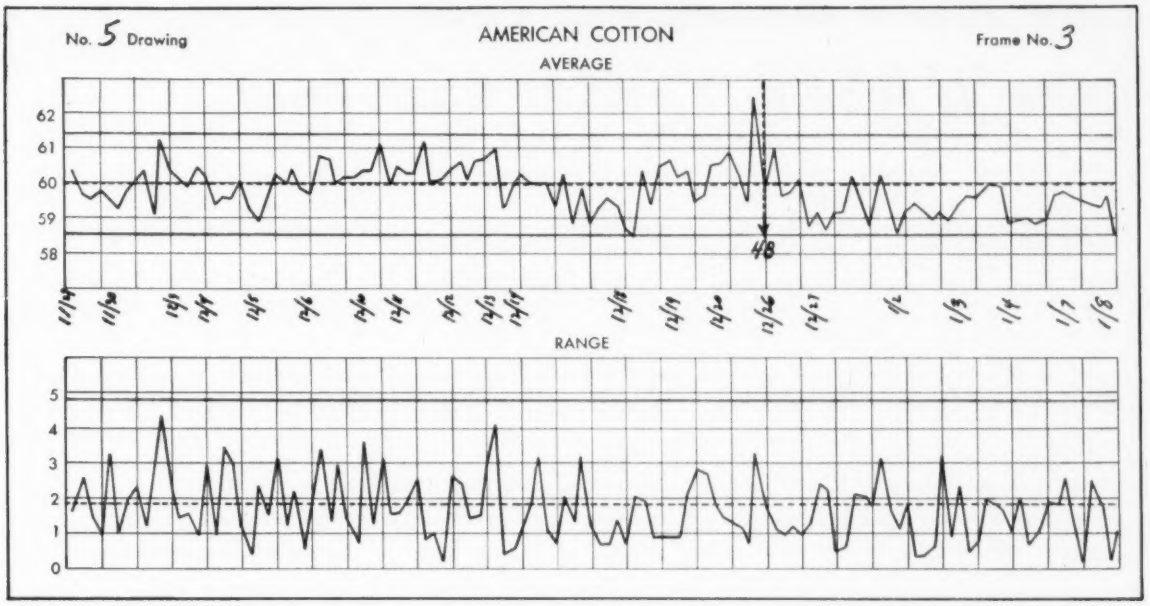
By EDWARD S. RUDNICK
Director of Research, Wamsutta Mills

THE PREPARATION OF CONTROL CHARTS by the quality-control department only partly licks the problem of controlling textile processes. The important phase of any quality-control program is the follow through. A quality-control program without a follow through is like a cloth room that carefully inspects every roll of cloth from each loom and then doesn't report the looms producing bad cloth to the weave room.

Fast Action Is Necessary

The textile industry has unique quality-control problems that require fast communication of data to the man responsible for decisions.

First, the individual worker for the most part has no control over the product his machine is turning out; the operator cannot change a gear to bring the machine into control. Because of this situation, a control-chart on each machine is not practical. (Of



THE "OUT-OF-CONTROL" POINT was brought into line by changing the draft gear from a 49-tooth to a 48-tooth gear. The average and range figures are plotted on aligned charts. The line through the range graph represents the average range. The line through the average graph represents the correct sliver weight.

course, there are exceptions: pickers in a cotton mill, for instance.)

Second, ranges that are out of control can seldom in themselves be corrected. The correction usually requires action to reduce the variability of the previous processes. However, at Wamsutta, out-of-control ranges are used as a barometer of the variation from the previous processes and for computing the limits on the average charts when they are revised.

Third, an assignable cause of variation for out-of-control points can seldom be immediately determined, for many factors contribute to the variability of the textile product. But corrective action (usually gear changes) can be made.

We at Wamsutta feel that the man in charge of a department is closer to his operations than the control laboratory is and that he should have the final decision on whether or not a change is made. For this reason, we took the testing and controlling of the two key processes of the card room out of the central laboratory and put them back into the mill.

Ribbon Lappers and Draw Frames Are Our Key Processes

Ribbon lappers and draw frames are the two key processes of the card room. Each machine is sampled twice each shift by the sizer or second hand. The samples are weighed on a direct-reading grain scale, which is adjacent to the overseer's office, and the results are plotted on the average and range charts. If a point falls beyond the control limit, an immediate retest is taken on the same machine. If the retest verifies this out-of-control situation, the gear is changed on that machine. An arrow, up or down, is drawn on the chart to denote the change, and the number of teeth in the new draft gear is recorded for future reference.

So, on these key processes the control is almost at the processes themselves; the follow through is done automatically without delay or communication. The charts are kept in large loose-leaf books on the overseer's desk. He can check how the machines are running at any time—trends, gear changes during the night, etc.

The control laboratory computes the limits and makes up the charts for the card room, and the finished charts are sent back to the laboratory for filing.

Admittedly, some accuracy is lost by sampling under uncontrolled conditions by nontechnical personnel. But periodic checks have convinced us that the speed of our round-the-clock control more than offsets the accuracy lost.

Gear changes under this new system are considerably less than were made previously. This reduction in gear changes indicates that changes were previously being made in the "chance variation" area by second hands on one shift and then changed back on a later shift.

Roving and Yarn Are Tested Daily

Roving and yarn processes are tested daily, and the results are plotted on the control charts in the control laboratory. The results are communicated to the overseers, assistant superintendent, and general superintendent in two ways. The regular roving or yarn test reports are sent with the actual size and average figures. Along with these figures go the roving or yarn daily quality-control reports. These reports interpret the respective control charts in nontechnical language.

The reports have columns for each of the characteristics plotted. The yarn report has a column to identify the yarn number and spinning room and has columns for the mean strength, the range of the strength, the mean size, and the range of the size—the four characteristics plotted daily for each yarn number. Each yarn number reads horizontally across the report. One or two words are usually sufficient to explain the condition of a chart. The overseer has to refer to the data sheet only when the column reports "warning region" or "out-of-control."

Out-of-control items are circled on the quality control report in red pencil to call attention to them. The superintendents look for red circles to see if anything is wrong. These reports on yarn and roving are delivered within 24 hr. after the samples are

(*Continued on page 228*)

How Much Money Per Year Does WASTE YARN Cost You?

Waste Report

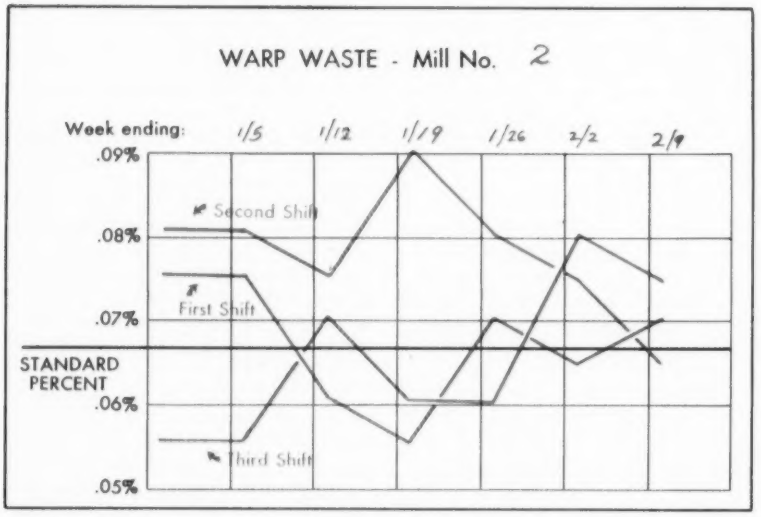
MILL NO. ..... Week Ending .....

Type waste	Shift	Pounds for week	Percent	Accum. pounds	Percent to date	Standard
WARP	1	52	.06			
	2	66	.08			
	3	67	.08			
Total warp		185	.08	4,184	.066	.064
FILLING	1	101	.13			
	2	73	.09			
	3	27	.03			
Total filling		201	.08	6,122	.096	.079
RAGS	1	52	.06			
	2	35	.04			
	3	13	.01			
Total rags		100	.04	3,392	.053	.028
TOTAL SWEEPS		1,471	.65	38,556	.60	.66

TOTAL FOR MILL ALL SHIFTS —

	Pounds for week	Percent	Accum. pounds	Percent to date	Standard
WARP WASTE	728	.09	21,469	.085	.058
FILLING WASTE	1,054	.13	36,132	.14	.09
RAGS	345	.04	10,620	.042	.028
SWEEPS	5,616	.76	154,847	.63	.62
QUILL STRIPS	4,418	.56	137,535	.54	.45

WASTE IS TOO HIGH on this weekly report, which shows the waste accumulation for the year. This report was made at the beginning of the waste-control program, and the percentage of waste soon dropped.



WASTE FIGURES ARE COMPARED between different shifts when graphs are used. The standard percentage of waste is used as a yardstick to show when too much waste is made.

- **The reduction of yarn waste in a weave room is just as important as the reduction of seconds**
- **Weave-room yarn waste costs $100 per loom per yr. It can cost a lot more if it isn't controlled**
- **In this waste-reduction program, formulas are used to show how much waste you can expect from different fabrics**

By W. C. WESTBROOK
Consulting Editor, TEXTILE WORLD

MATERIALS WASTE in the weave room is more expensive than that of any other department of the mill because each process up to and including weaving has added to the cost of the yarns. Percentagewise, the materials waste is usually smaller than that of other departments.

For average cloth constructions such as soft-filled sheeting, about 1½% of the yarns are wasted in the weaving of the cloth.

Although each operation in the handling of yarns adds to the cost of the yarn, the operation does not add to the value of the waste products. For example, a typical filling yarn is manufactured at a cost of 50¢ per lb. and can be sold as soft-yarn waste for 24¢ per lb. The loss is 26¢ per lb. If this filling is woven into a cloth that is manufactured at a cost of 67½¢ per lb., the rag waste from the cloth can be sold for only 12½¢ per lb. The loss is then 55¢ per lb.

If money is to be saved on yarn waste in a weave room, a waste-control program must be installed. A successful waste-control program should be based on actual dollars-and-cents savings as well as on poundage savings.

An efficient weave-room waste-control program cannot be put into operation unless the expected minimum waste can be determined. Weave-room waste materials are grouped in five classifications and the expected waste from each group can be worked out from the following formulas:

1. Sized-Warp (Hard-Thread) Waste

Since it is not possible to weave

all the yarn on a loom beam into cloth, 2 yd. of waste on the run-out of each beam is a fair allowance. This formula was worked out by using 2 as a constant.

a. $\frac{\text{No. ends in warp} \times 2}{840 \times \text{warp count}}$ = lb. waste per beam

b. Lb. waste per beam ÷ hr. beam will run = lb. waste per loom hr.

c. Lb. waste per loom hr. ÷ actual lb. production per loom hr. ×100 = the percentage of waste.

2. Filling (Soft-Thread) Waste

This waste comes from the batteries, the filling holder, sloughed filling, and soiled and damaged filling. The minimum filling waste that can be expected is 1½ yd. per filling bobbin.

a. $\frac{\text{Bobbins used per hr.} \times 1.5}{840 \times \text{filling count}}$ = lb. filling waste per loom hr.

b. Lb. waste per loom hr. ÷ actual lb. production per loom hr. ×100 = the percentage of waste.

3. Filling-Bunch (Quill-Strips) Waste

This waste results when a filling feeler is used to indicate transfers of the filling bobbins. When drills, twills, and other similar types of cloth are woven in 40-in. widths, 8 yd. waste per filling bobbin is a safe allowance. To figure the standard quill-strips waste, use the formula in soft-thread waste and substitute 8 for the 1.5 constant.

4. Sweeps Or Sweeping Waste

The principal items that go into weave-room sweeping waste are starch and lint that shed from the warp as it is woven into the cloth. A standard sweeping-waste allowance for different types of cloth construction was made by weighing actual sweeping waste over a period of time. The allowances were grouped in five classes:

a. All two-harness goods = 0.01 lb. per loom hr.
b. All three-harness goods = 0.015 lb. per loom hr.
c. All four-harness goods = 0.02 lb. per loom hr.
d. All five-harness goods = 0.025 lb. per loom hr.
e. All Canton flannel = 0.025 lb. per loom hr.

Lb. waste per loom hr. ÷ actual lb. production per loom hr. ×100 = the percentage of waste.

5. Cloth Waste Or Rags

A flat 0.00066 lb. of rags per loom

(*Continued on page 262*)

How To Cut Down YARN-WASTE COSTS

• Now that you know whether your yarn-waste costs are too high, you will want to know what to do to reduce them. One mill saved $4,000 in 2 mo. They did it this way—

WARP-WASTE SAVINGS in the weave room begin in the slasher room. The warp beams are kept smooth and free from splinters or rough places that may damage the warp before it runs all the way out.

Full warps are stored separate from empty beams so that the removal of the empty beams will not damage the full warps. The floor area around the stored beams is kept smooth to prevent truck wheels from skidding beams that are being moved into stored beams.

Warp trucks used to transport full warp beams from the slasher room to the weave room or tie-in room are kept in good condition. Casters are well oiled and are free from yarn waste. The casters are taken apart and cleaned weekly to eliminate any possibility of a frozen wheel throwing the truck into a loom. The trucks are padded on top to prevent damage to the warp beam.

Tying-in-machine operators pull just enough warp off the beam to straighten out the ends to tie them. The knots are pulled through the reeds only enough to tie the warp to the warp apron on the loom.

When warps run out, the weave-room second hand initials or stamps the cloth at the beat-up to show that the warp is completely out. If the second hand leaves it up to the weaver or loomfixer to mark out warps, warps that run bad near the end will be cut out and warp waste will be increased.

Filling Waste Starts in Spinning

All bunches on bobbins are built alike so that a minimum bunch is left on the bobbins at the loom. If the bunches are built accurately and the filling feeler is set correctly, 5½ picks of filling on the bunch is sufficient for most sizes of filling.

The tension on spindles is controlled to prevent soft-wound bobbins that will slough off in the loom. Proper spinning-room practices also require the doffing of bobbins before the bobbins are filled too full. Then the batteryhand does not have to pull off a lot of filling when she fills the batteries.

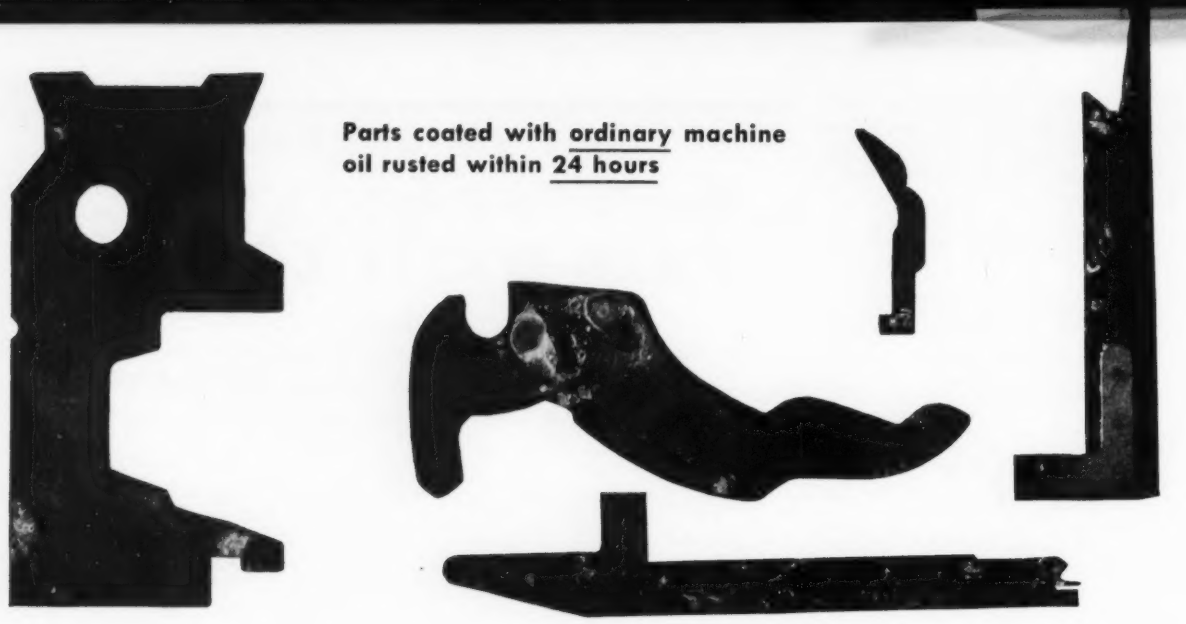
Good Practices in Weaving Prevent Waste Filling

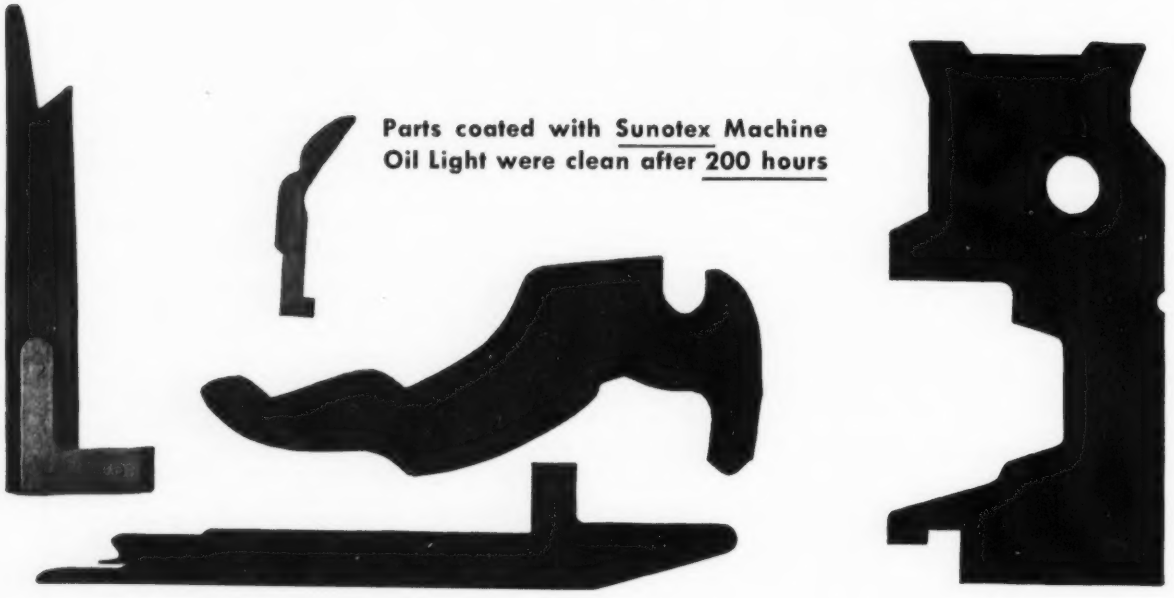
The batteryhand places battery waste and tails that are pulled from full bobbins of filling into containers that are placed throughout the weave room so that this waste will be unsoiled. The batteryhands also flag looms that are changing pieces so that the loomfixers can fix the looms.

When battery-filler trucks are used, they are not loaded so full that bobbins of filling drop on the floor and are soiled.

The loomfixer helps reduce filling waste by fixing the battery each time the transfer hammer breaks a bobbin. He also keeps the lugs set high to prevent sloughed filling. He prevents soiled filling by removing all the full bobbins that are used to flag the looms each time he removes a flag (a metal or wood flag will prevent all this type of waste).

The little extra effort that is taken to prevent weave-room yarn waste doesn't take much of the employees' time and it pays off in dollars saved at the end of each year.





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after 200 hours' exposure to 100% humidity at 100 F

After the standard Humidity Cabinet Test, parts protected by Sunotex Machine Oil were as clean as new. In the same test, parts coated with ordinary machine oil rusted within 24 hours. Why take a chance of ruining your valuable equipment? Use Sunotex Machine Oils and be sure. For detailed information, call your nearest Sun office or write SUN OIL COMPANY, Philadelphia 3, Pa., Dept. TW-4.

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PLANT MAINTENANCE CONFERENCE

For ENGINEERS and MASTER MECHANICS-

THE FOURTH ANNUAL Plant Maintenance Show and Conference was held in Cleveland, Ohio, in January. Attended by thousands of engineers and maintenance men, the show and conference had much valuable information for those who sought it.

More than 300 companies exhibited maintenance equipment and products at the show. At the conference, 16 technical papers, 21 round-table discussions, and two panel discussions explored engineering and maintenance problems.

Several of the technical papers applicable to textile-mill maintenance problems are presented here in condensed form. Others will be presented in later issues.

The authors of some of these papers are widely separated from the textile industry, but the problems they discuss are problems that the engineer and master mechanic in every mill have. A little imagination and adaptation can make valuable ideas and experience useful in mills.

The article by M. A. Cavanaugh of The Budd Co., for example, gives details on how The Budd Co. keeps 250 self-propelled trucks in good operating condition. Probably no textile plant has a fleet of trucks this large; but the primary principles of mechanical maintenance and the record system explained by Mr. Cavanaugh can be applied to compressors, air-conditioning systems, boilers, and any machine or equipment that is serviced by the engineer or master mechanic in a textile plant.

The seven guides to preventive maintenance explained by George J. Martin of National Biscuit Co. can serve as guides to draw the line that separates breakdown maintenance from preventive maintenance in textile plants.

Robert G. Edsall of Westinghouse Electric Corp. meets the textile engineer on his home ground when he talks of methods of cleaning and inspecting transformers, turbos, motors, generators, relays or cables, and fluorescent lamps. Mr. Edsall not only tells what the problems are but also adds the cures that have saved Westinghouse money in cleaning, shutdowns, and valuable equipment.

So it goes with all the papers selected for presentation here. Any engineer or master mechanic charged with mill maintenance can profit by a thoughtful reading of these papers.—Editor

Serious-Thinking Engineers Get Set for the Future

• In his introductory remarks at the special conference on maintenance in textile plants, Mr. Colbath traced the history of power and with that background developed the several important ideas summarized here.

By **H. S. COLBATH,** Plant Engineer, Bibb Mfg. Co.

Hot-Air Turbines

We, as engineers, are looking forward to the completion of the development now being done on hot-air turbines.

These turbines operate along the general lines of the steam turbine, but fuel oil or gas (coal hasn't been used successfully yet) is fired into greatly expanded air in the turbines. This operation pressurizes the entire combustion chamber.

The hot gases formed by the pressurized action pass over turbine blades and rotate a shaft that drives pulleys, gears, or an electric generator.

This same principle has been used by the aircraft industry in the development of the turbo-jet engine. Units of this type are now being manufactured to fit on an ordinary flat car and develop over 20,000 hp.

Atomic Energy

In 10 short years we have harnessed a new form of power—atomic energy. In addition to its use as a destructive power, we have generated a few kilowatt hours of electricity with it by going back to the old steam-engine-generator method.

But what about the future? Can our engineers and scientists invent an atomic motor, mount it on a car, and drive it 100,000 miles with a small pill for energy? Can man build an atomic airplane or space ship? Will your home of tomorrow have a small power plant to supply heat, air conditioning, and lights without outside wiring?

Will your loom be driven by a self-contained, self-powered prime mover? Will you literally be able to place your winder or spinning frame on wheels and move it about as production requirements change?

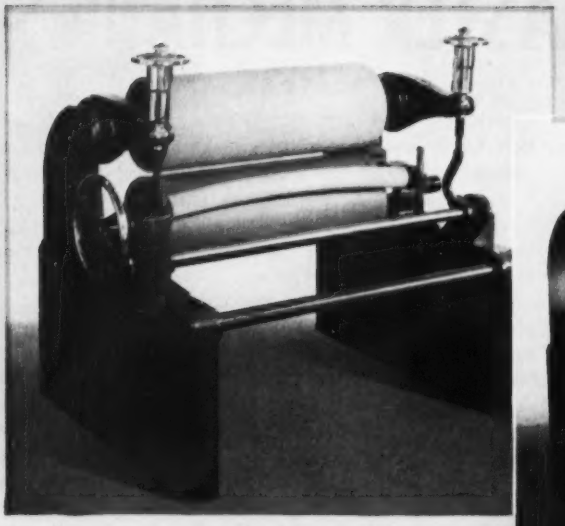
The electric motor has not put the steam engine out of business. Neither will atomic power put the conventional gasoline engine out of business. Atomic power will only supplement gasoline engines for many years.

Engineer Shortage

Soon after the successful development of the reciprocating steam engine, one engineer was needed for every 1,000 workers. It is my guess that 10 engineers will be needed for every 100 workers in the atomic age.

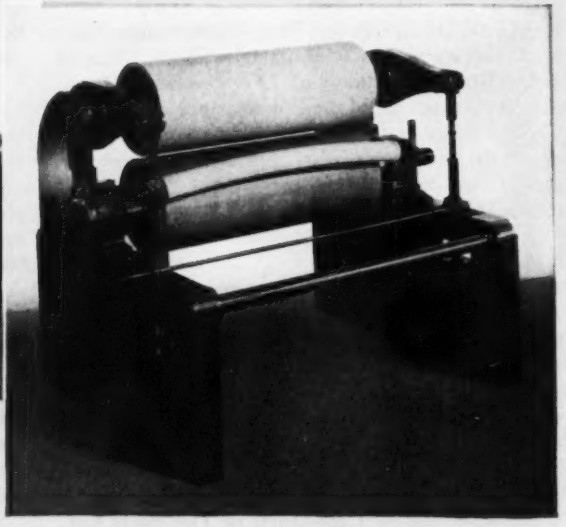
We will be 30,000 engineers short of requirements in 1953, and statistics indicate that we will be short 60,000 engineers by 1955.

Serious thinking will be needed to a greater degree in the near future than ever before in the past.



Left: Butterworth Pad with micro-set pressure

Below: Butterworth Pad with pneumatic pressure



At Last a Basic Padder

Pneumatic or Micro-Set . . . up to 15 tons . . .
2-3 rolls any width . . . average 12-week delivery

There's something new in Padders. A 2-year program for the standardization of component parts has now been completed and Butterworth offers a choice of 2-roll and 3-roll padders and mangles . . . in any width . . . with an average delivery of 12 weeks.

With the new Butterworth Padders, there is a choice of pneumatic or micro-set pressure systems, with pressures up to 15 tons. The micro-set system is designed to operate easily and accurately up to the full 15-ton loading pressure. The pneumatic system is complete with pressure indicators and controls.

Frames and housings are of rigid cast iron construction, properly braced. Rolls are mounted in spherical roller bearings designed for long life and trouble-free operation. Nip rolls can be furnished all rubber covered or in combination with stainless steel rolls. Accessories such as expander bars, friction let-off and winders are included to meet operating requirements.

Before you do anything about new pads or mangles, let us send a Butterworth engineer to your mill with facts and figures on these new Butterworth Pads.

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Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing and Embossing
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BUTTERWORTH

From Floors to Roofs in TEXTILE-PLANT Maintenance

Textile-plant engineers discussed maintenance problems in a two-day round-table discussion. Here are some of their questions and answers about

- **Flooring**
- **Air Conditioning**
- **Roofing**

FLOORING

What are your main problems with concrete floors?

▶ We often move beams weighing 1,000 to 1,200 lb. across concrete floors in our slasher room. When the beams were dropped, they used to dig holes in the floors. Now we use a sealer on the floor that has solved the problem.

To maintain the sealed floor, we clean it each Saturday night at 12 o'clock with a cleaning compound. Then we apply the sealer.

We scrub the floor lightly every 3 mo.

Objects dropped on this floor now do not injure it.

▶ We have a new-type floor in a new dyehouse that's proving very satisfactory. The subfloor is 4-in. thick and rough finished. When this subfloor was poured it was allowed to dry and was given a light coating of spindle oil. The oil was then wiped off.

A finished coating of rich-mixture concrete 1¼-in. thick was poured over the oiled subfloor and finished smooth. The top floor theoretically floats over the subfloor since the oil keeps the two floors from bonding.

When the top floor is damaged, the damaged place is removed and a patch is put in down to the rough concrete. The patch is hardly noticeable.

We think this is an important development in dyehouse floors.

What is the best way to remove broken concrete when it has to be patched?

▶ We use a concrete saw to cut all concrete. When we have to replace electric wiring under a concrete floor, we simply saw out a trench and pull out whole sections of concrete.

How do you maintain hardwood floors?

▶ We have 5-million sq. ft. of oak and maple floors in our plants. We're anxious to learn the best methods of maintaining and preserving these floors because it will cost $2,500,000 to replace them at today's floor prices.

Our only floor maintenance at present, other than sweeping, is in twister rooms and in one spinning room.

We scrub the floors of twister rooms.

A 125,000-sq. ft. floor in one of our spinning rooms is maintained by the Tennant system. The old floor was refinished at a cost of $12,500, for an average cost of 10¢ per sq. ft.

The work on the floor included removal of travelers, sanding, priming, and sealing.

▶ We put in a new tongue-and-grooved maple floor recently in an area 500 or 600 ft. long and 400 ft. wide. We poured linseed oil over the new surface when it was floored. No other treatment was used.

(Continued on page 248)

Seven Guides to PREVENTIVE-MAINTENANCE Success

- **Preventive (or voluntary) maintenance saves money. Maintenance personnel should be sold on the program before it starts**
- **A sound program is based on adequate records, work orders, time cards, withdrawal orders, and monthly reports**

By GEORGE J. MARTIN, National Biscuit Co.

GIVING VERBAL MAINTENANCE ORDERS and making repairs only when equipment breaks down is no longer good enough in modern plants. Manufacturing plants in all types of industry are now using preventive maintenance, either in part or as a complete program.

Forced vs. Voluntary Methods

Maintenance in one of two forms has to be used:

1. Breakdown maintenance consists of making repairs to equipment and machinery when actual failure occurs during a scheduled production period. At this time only necessary repairs to get the equipment into production quickly are made. This form of maintenance is expensive and inefficient, and it slows down production.

2. Preventive maintenance is a sound, logical, tested system of planned maintenance to obtain the greatest efficiency and production with existing equipment. It prevents breakdowns and shutdowns through the systematic inspection of equipment. The making of adjustments and the scheduled repairs to equipment before failures occur prevent interruptions to production schedules.

Voluntary Maintenance Cheaper

The fear that the installation of new maintenance programs and procedures will result in greater costs is groundless. Maintenance-data costs over a period of 15 yr. indicate that savings are made through preventive maintenance.

Frequently, cost comparisons are made between one plant using breakdown maintenance and another plant using preventive maintenance, and the result is often that costs are lower where breakdown maintenance is used. This type of comparison is misleading because the costs of breakdown maintenance can be lower for only a few years. Then, expenditures on major repairs that must be made to keep the equipment operating the anticipated life will result in greater yearly costs than those of plants that use preventive-maintenance methods.

Longer equipment life is realized from preventive maintenance because the equipment is in good operating condition at all times.

Sell the Idea to Management

The plant engineer should advise top management on the most economical and most efficient mainte-

(Continued on page 232)

Coming Up!

Steel for the Textile Industry

You can always be sure of fast action when you call Ryerson for steel. Sure that your requirements will get prompt, interested attention.

At each of 15 strategically located Ryerson plants, experienced steel men who know the special needs of your industry are ready to work with you. And at Ryerson you draw on the most widely diversified stocks. Carbon steel, alloys, stainless—though it's still difficult to keep every size of every product always on hand, you will find we can take care of most every steel requirement.

You can have your steel cut to size, too, and you can always depend on Ryerson quality. So for every steel requirement, call your nearby Ryerson plant.

PRINCIPAL PRODUCTS

CARBON STEEL BARS — Hot rolled and cold finished

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PLATES — Many types including Inland 4-Way Safety Plate

SHEETS — Hot and cold rolled, many types and coatings

TUBING — Seamless and welded, mechanical and boiler tubes

ALLOYS — Hot rolled, cold finished, heat treated. Also tool steel

STAINLESS — Allegheny bars, plates, sheets, tubes, etc.

BABBITT — Five grades, also Ryertex plastic bearings

MACHINERY & TOOLS — For metal fabrication

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ELECTRICAL-EQUIPMENT Problems Eliminated Through Maintenance

- **Production shutdowns caused by electrical equipment can be prevented by common-sense maintenance**
- **Check electrical equipment when load is lightest**
- **Proper lamp cleaning can increase lighting efficiency and reduce cleaning costs**
- **Circuit breakers and generating equipment present special problems**

By ROBERT G. EDSALL,
Westinghouse Electric Corp.

THE PROBLEM OF MAINTAINING electrical equipment on an efficient operating standard can become a headache or simply a routine job in a manufacturing plant. We believe we have a method of inspecting and cleaning transformers, turbos, motors, generators, and relays or cables that prevents production shutdowns.

Set Up Operating Standards

When defects are discovered or when operating standards become questionable, immediate replacements or repairs are made.

Maintenance means just one thing —keeping the equipment operating. When failures occur, it is the maintenance department's job to make immediate repairs and get the equipment back into service.

The first 6 mo. of our maintenance program, which was started 14 yr. ago, indicated that a portion of the inspected equipment badly needed cleaning and repairing. The correction of the extremely bad conditions prevented a large number of accidents and fires.

Repair Equipment Regularly

Now all of our electrical equipment is inspected, cleaned, tested, and repaired at regular intervals by the maintenance men of the various divisions. The results are reported to the works-engineering department.

Since our present operating load is practically the same for the entire seven-day week, our inspection and the resulting work on a circuit, transformer station, or feeder must be done when our work load on electrical equipment is at the minimum. Our shutdown period is between 11:30 p.m. and 12:15 a.m.

When a power shutdown is necessary, the works-engineering department obtains permission from the production supervisors.

Replace Circuit Breakers

A damaged circuit breaker that is to be removed from its housing is replaced by a reconditioned one. The total over-all time for an outage of a main-line breaker under these conditions is approximately 10 min.

(Continued on page 242)

Organized Maintenance Keeps MECHANICAL EQUIPMENT Running

- **This preventive-maintenance program for a large fleet of materials-handling trucks offers ideas that can be applied to compressors, air-conditioning systems, boilers, or practically any major machine in a textile mill.**

By M. A. CAVANAUGH, The Budd Co.

NO MACHINE HAS BEEN BUILT that will stand up against friction and stress without wear. The big question is how long the machine will last without giving trouble.

This question must be answered for each machine serviced. The answer comes from the service records of individual machines and establishes set times for preventive maintenance to avoid breakdown maintenance.

An example of a preventive-maintenance program that resulted in money saving, efficiency, and increased safety is a truck shop that services 250 gasoline and electric self-propelled units. Hundreds of flat, skid, box, die, and other types of materials-handling trucks are also serviced in the same shop.

How Many Men Are Needed?

Two supervisors, one on each shift, and approximately 20 men service all the trucks. The men are classified as gasoline- and electric-truck repairmen, welders, millwrights, oilers, and a clerk.

Scheduled inspection and timely repairs enable the 22 men to keep all the trucks in good operating condition.

Inspection Prevents Breakdowns

Trucks are inspected at 2-wk. intervals and are given thorough inspections every 8 wk. Inspection forms for both gasoline and electric trucks are combined in one tag that is mounted on the trucks in cellophane holders. The same tags are used for both inspection periods and are arranged so that part of the inspection numbers on the tags are omitted at each inspection.

Too many forms can be confusing and costly.

The mechanic does all inspecting and signs the tag when he has finished inspecting and repairing a truck. His inspection is the final inspection—but the people who operate the trucks in another department police the inspection.

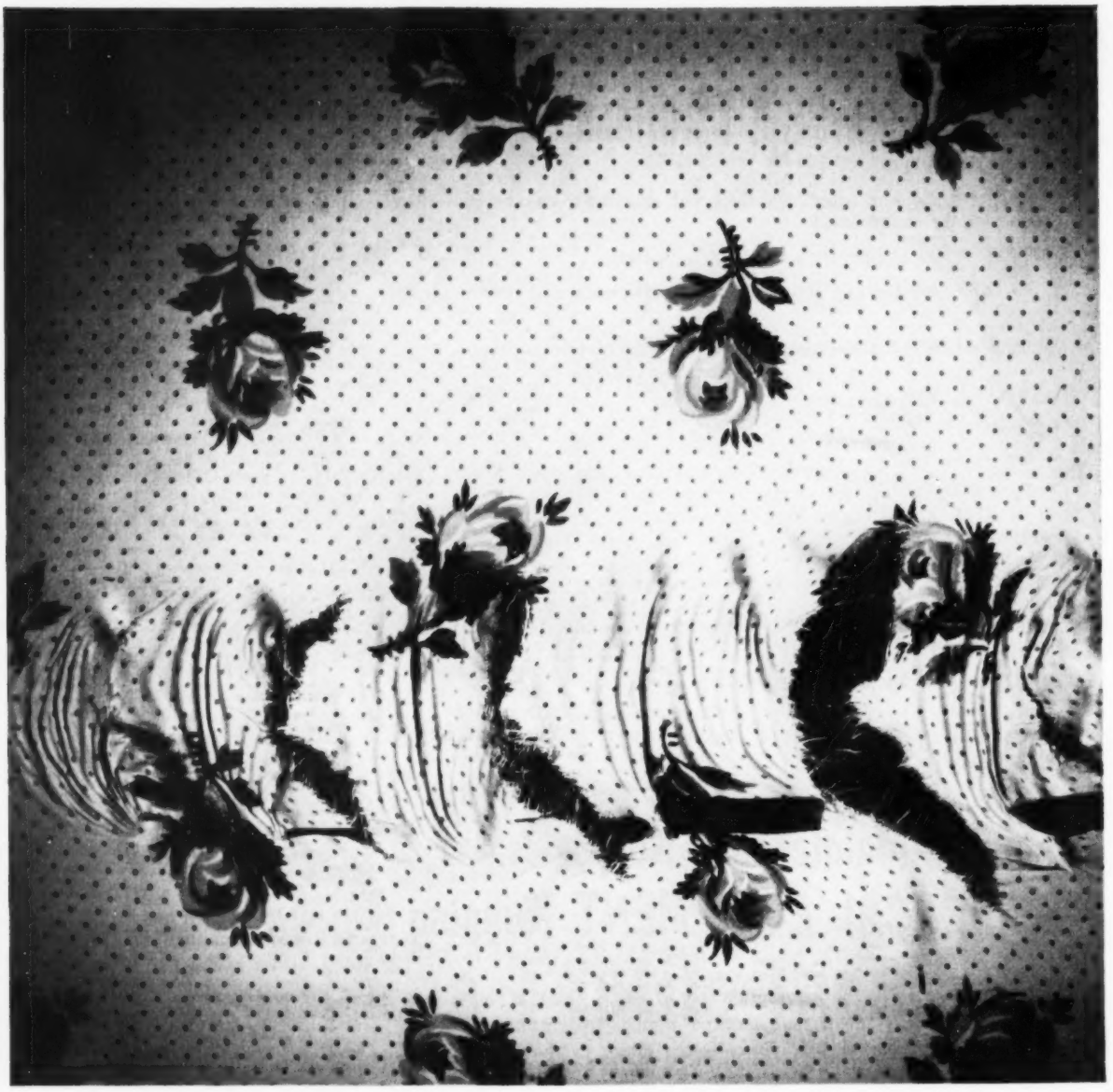
The only other follow-up method of form control is a huge board on the truck-shop wall that calls the attention of the clerk and mechanics to the trucks that are due in the shop for inspection on a particular day. This board is posted a week in advance.

The mechanics realize that instead of doing more work in the maintenance program, they actually reduce the amount of work they do to keep the trucks operating.

Cooperation Is Necessary

If a truck is not brought to the shop

(Continued on page 236)



Profit leaks in glazed fabrics

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I am also interested in formulae for:
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You can eliminate those costly pluck marks (*and resin build-up on rolls*) by just adding Sanol 50 Finishing Oil to your resins. For good measure Sanol 50 is a lubricant that prevents friction burns, a softener that imparts a pleasing hand to embossed or dyed fabrics, a wetting and rewetting agent for shrink resistant finishes *and* moreover it does not discolor nor develop a rancid odor. The price is low. Samples are free. Send the coupon to BRYANT CHEMICAL CORPORATION, N. QUINCY 71, MASS. or BOX 2301, SPARTANBURG, S. C.

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POWER-PLANT Maintenance Aims at Adequate Power, Low Cost

Power need vs. maintenance cost determines whether to choose planned or breakdown maintenance. Other questions you must answer are—

- **How often to inspect equipment**
- **How many records you'll need**
- **How big a work crew you can justify**

By CHARLES I. FISHKIN, Power Engineer, Monsanto Chemical Co.

THE MAINTENANCE OF power-plant equipment should be planned to help attain the twofold objectives of the power plant: first, to supply dependable power to the manufacturing plant; and second, to make this power available as cheaply as possible.

There is no one maintenance program that is best for all plants. If a program does the two power-plant jobs mentioned, it is a good one.

Maintenance work can be divided into two categories:

1. Planned maintenance work, such as scheduled outages and lubrication
2. Breakdown maintenance

The big problem is to decide where to draw the line between the two. If absolute dependability is a must, the work must go in the planned-maintenance category. If dependability is not critical and a breakdown would be less costly than the necessary planned maintenance, the work should go in the breakdown-maintenance category.

One point to keep in mind is that planned outages and inspections of equipment are, in themselves, expensive. Quite often power-plant services can be just as dependable, and somewhat cheaper, if the equipment is not kept in perfect repair.

How Often Should You Inspect?

The frequency of inspection is an educated game of trial and error. The optimum frequency is probably different for each make of equipment and for each installation of this make. On boilers nowadays, we generally try to install them to run a year without a shutdown. On a new installation, however, I would try to shut down for inspection after a short period of initial operation and again at 6-mo. intervals until conditions showed that longer runs can be safely made.

On rotating or reciprocating machinery, inspections are generally necessary at from 1- to 3-yr. intervals, since some types of breakdown would result in serious and expensive damage to the equipment itself.

After we have decided how much planned-maintenance work we are to do, we have to find the right type of system for keeping track of the pro-

(*Continued on page 264*)

Roofs, Floors, and Paint Give Most Trouble in BUILDING Maintenance

Key to successful building maintenance is scheduled inspection and preventive repairs. You'll have fewer headaches if you—

- **Put on a good roof and keep it up**
- **Select the proper floor material and maintain it**
- **Paint for protection rather than for looks**

By RICHARD S. AUSTIN, American Cyanamid Co.

THERE IS NO REAL ANSWER as to the life expectancy of buildings under different sets of conditions. Buildings that are subjected to extreme moisture, fumes, condensation, and other severe conditions may not have as long a life as others unless they are maintained more carefully and at a much greater cost. In general, any building that is structurally safe and sound will last many years if it is well maintained.

The question as to whether the attention given buildings should be dependent upon their life expectancy is dangerous. It is best to put all buildings on a par when a maintenance program is being set up unless the buildings are very old and decrepit and it is contemplated that they will be torn down shortly. Even then some minimum maintenance should be planned.

A building is in good condition when it is structurally safe, reasonably attractive in appearance, and the maintenance on it is solely of a preventive nature. When a building requires more than preventive maintenance, it cannot be said to be in good condition. In that case, and if the building is of a permanent nature, it should be brought up to a standard where no maintenance is required except that of a preventive nature.

Good Inspection Is a Must

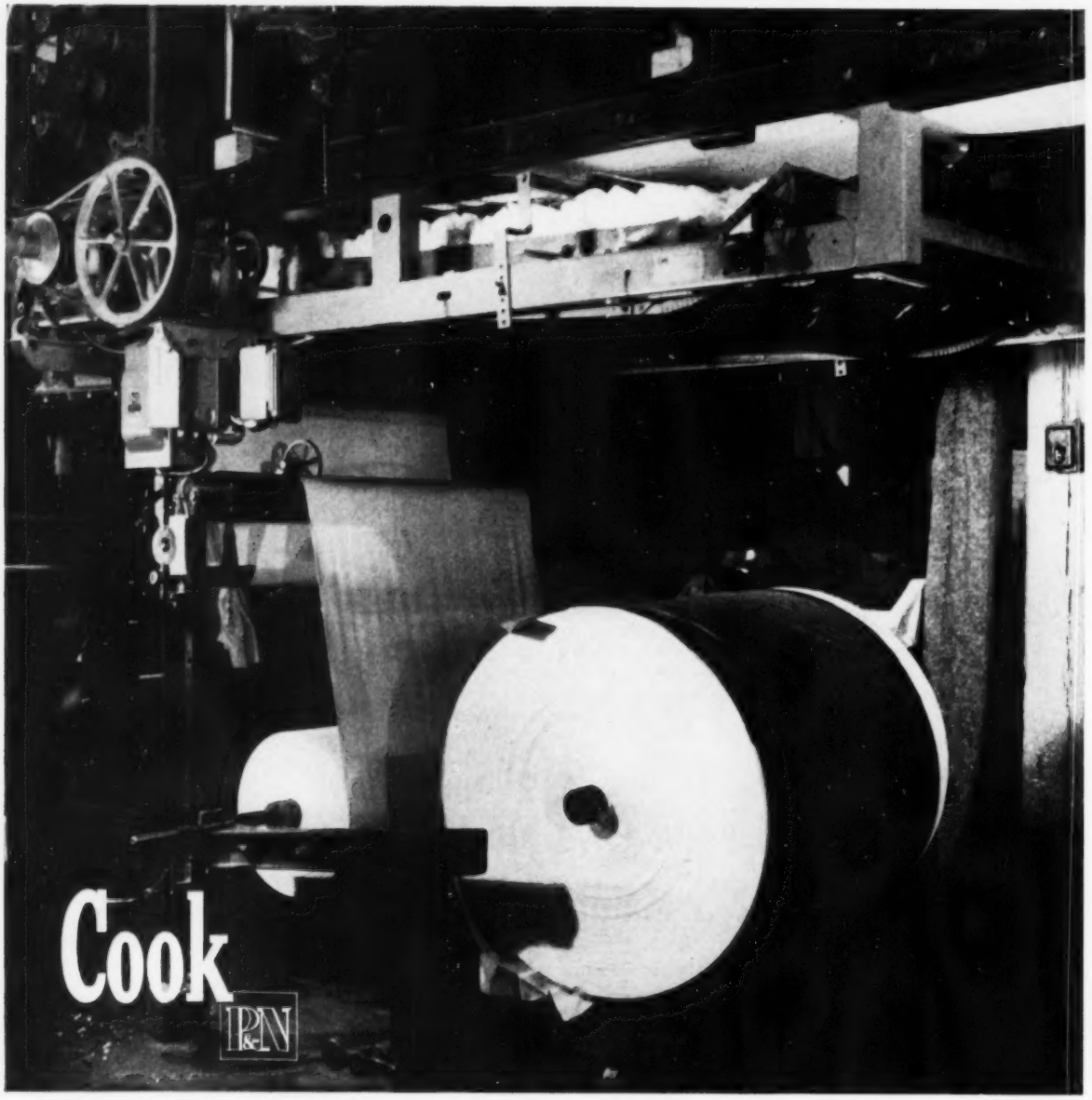
Only by semiannual inspections can you know of repairs that are necessary while they are still minor. Reports should be all-inclusive and cover both the inside and outside of buildings, and estimates should be prepared so that a preventive-maintenance program can be scheduled. A comparison of the costs each year will thus dictate how well the job is being done and if any drastic changes should be considered.

We have found that photographs of parts of buildings that are deteriorating slowly and where costs are high help to show the rate of deterioration and make a valuable argument for getting the approval of a major expenditure.

The inspection reports might well cover the following items:

1. Piles and foundations
2. Structural framework
3. Walls and copings
4. Floors and drains
5. Roofs and flashings
6. Windows and glazing

(*Continued on page 238*)

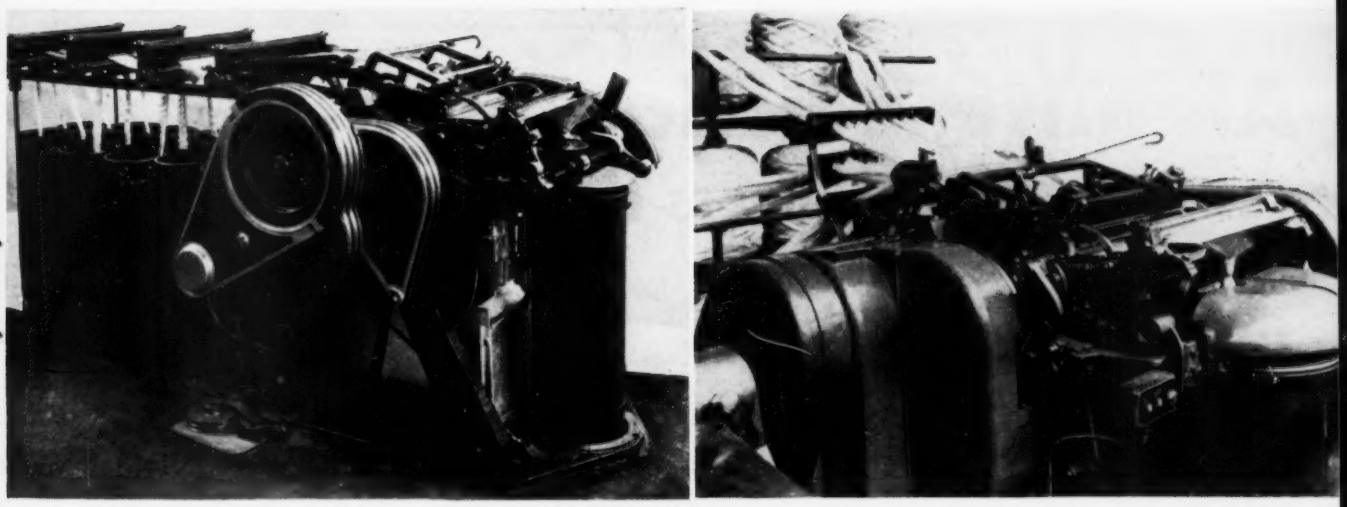


NEW SCRAY INCREASES PRODUCTION OF PRINT GOODS BY 15%

Can you apply it to other finishing processes?

The first installation of this new overhead, horizontal scray has been made on a printing machine where the fresh roll can be seen waiting to be placed on the rack. The 500-yard capacity of the scray allows ample time for piecing together the fabric ends without slowing the printing machine which runs at 100 yards per minute. As this patented scray can be economically built to hold any predetermined amount of cloth and automatically keeps the selvage in alignment, it should have many applications in dry finishing stages, such as before dry cans or padders or where an overhead scray would save valuable floor space. If you see a possible use for it in your plant, a Cook engineer would be glad to discuss it with your engineering department. Kindly address inquiries to ENGINEERING SERVICE, COOK-P&N MACHINE CO., INC., 365 DORCHESTER AVE., BOSTON 27, MASS.

DESIGNERS OF BLEACH, DYE, FINISHING, MERCERIZING, CLOTH OPENING & WASHING RANGES



RECTILINEAR COMBS can be used either with cans or balls in the creel, depending on the type of stock to be processed.

Low Drafts Are Best for Blends on FRENCH COMBS

- Rectilinear combs successfully handle staples of 2½ to 7 in.
- Production—about 16 lb. per hr. on 100% viscose staple—and noilage are lower than are obtained from Noble combs
- When you process uncrimped staple, use cans rather than balls in the creel to prevent splitting, setting of false twist, and undue strain on the pins
- A good humidity condition is 74° F., 62% r.h.

Half-Lap Pinning of a Typical French Comb

	Row	Pin Gauge	Pins per in.		Row	Pin Gauge	Pins per in.
COARSE HALF LAP	1	20	11	FINISHER HALF LAP	10	24	36
	2	20	14		11	24	36
	3	20	16		12	24	38
	4	20	21		13	24	38
	5	22	27		14	26	41
	6	24	32		15	26	41
	7	24	32		16	26	41
	8	24	36		17	26	45
	9	24	36		18	27	52

As a result of the increased interest by cotton spinners in synthetic staples longer than 3 in., and with the advent of various modified systems for processing fine, short-staple wools in blends with synthetics, French or rectilinear combs are coming into greater use. This type of comb successfully handles staples of 2½ to 7 in.

In addition, because of the comb's fine pinning and extensive combing action, blends of man-made fibers, originating from tow-to-staple conversion methods and presented to the French comb in an uncarded state, receive a very desirable blending action.

Production Tips

Compared with the Noble comb, the production of the rectilinear comb is low, about 16 lb. per hr. on 100% viscose staple. At the same time the percentage of noil is considerably lower. But the action of the French comb is such that fine-denier tops are of better quality than similar deniers on the Noble comb.

The humidity conditions necessary

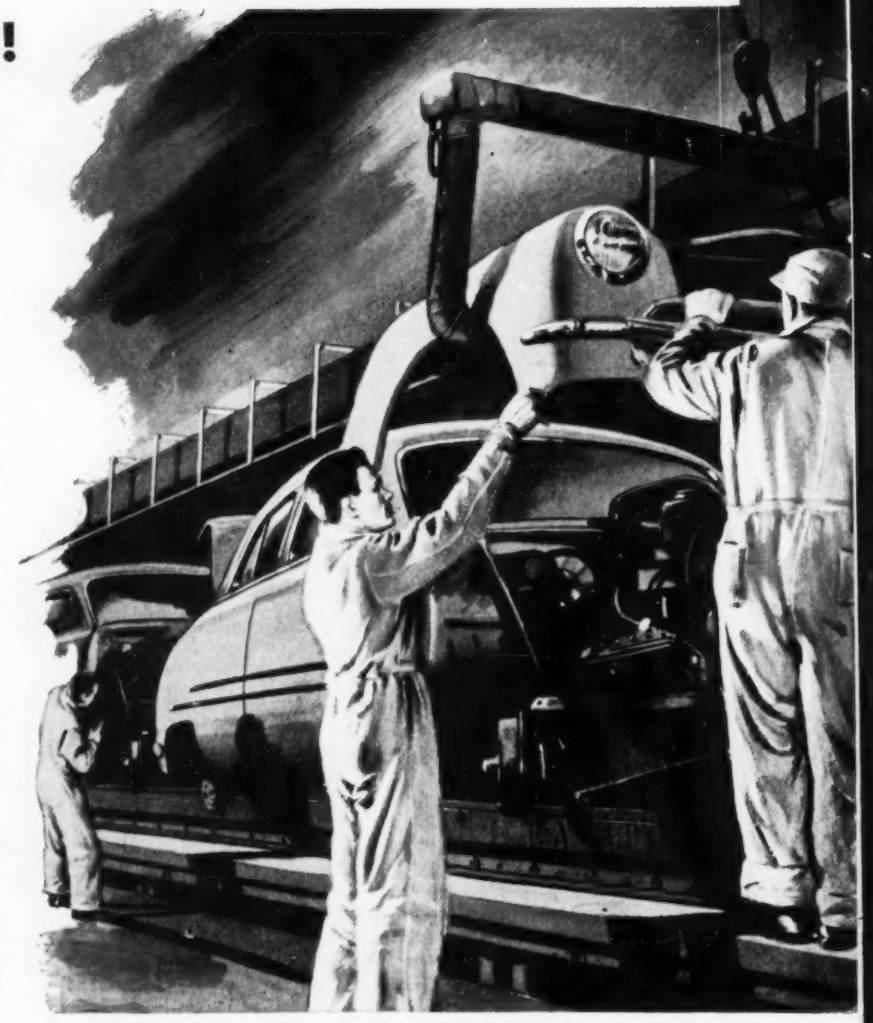
(*Continued on page 226*)

Adapted from the new Second Edition of "Rayon Technology Including Acetate," written by staff members at Textile Research Dept., American Viscose Corp., and published by McGraw-Hill Book Co.

Alemite "Friction Fighters"

save $11 every 8 hours on one machine!

...cut downtime 80%!



Lubrication trouble on a vital machine in a big Detroit automobile plant. Gallons of oil being wasted. Man-hours climbing. Spilled oil creating a major housekeeping problem—hazardous working conditions.

A trained Alemite "Friction Fighting" specialist was called in. After careful study, he recommended the installation of an Alemite Lubrication System. A system that would lubricate all 55 bearings of the machine simultaneously!

The change was unbelievable! Foremen said they'd never seen anything like it! Within a 24-hour period, oil consumption was cut 20 gallons! Lubrication downtime was decreased 80%! Bearing temperature was lowered 40°! The housekeeping problem was eliminated! *Estimated saving every 8 hours—$11! A total of $2869 a year!*

★ ★ ★ ★

Alemite's 35 years of experience in conquering friction can work for *you*, too! An Alemite Lubrication Engineer can show you how to save. Help you to cut costs, decrease downtime, increase profits! For further information, contact your Alemite distributor—*today!*

Alemite—the great name in lubrication serves the great names in industry

Wherever metal touches metal, wherever you find machinery in motion, you're most likely to find Alemite Lubrication and Lubrication Systems on the job. Here are but a few of the industrial leaders who use Alemite.

The Warner & Swasey Co. • S. K. F. Industries, Inc.
Allis-Chalmers Manufacturing Co.
Minnesota Mining & Manufacturing Co.
Bethlehem Steel Company

•

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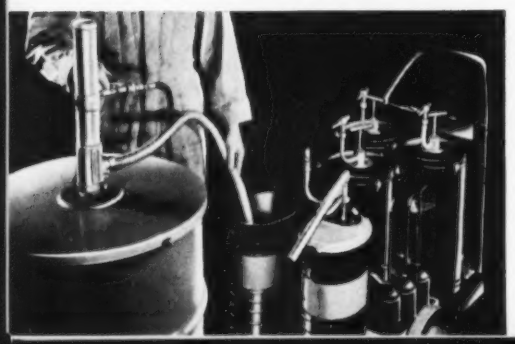

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TEXTILE Equipment NEWS

$62,000 Machine Embroiders 15 Yd. of Fabric at a Time

A new automatic shuttle embroidery machine that embroiders 15 yd. of fabric at a time within the machine's over-all 58½ ft. of length and 7½ ft. of width has been developed and made available by Robert Reiner, Inc., 556 Gregory Ave., Weehawken, N. J. The new machine is designed as an economical replacement of old units that heretofore have been imported from abroad. It can handle cotton, nylon, silk, rayon, and acetate yarns.

The embroidering area is divided into an upper and lower bank, each with 513 needles, 513 borers, and 513 shuttles that hold an average of 150 yd. of yarn on each of their enclosed bobbins. Stitching speed is 130 shuttle strokes per min. So there is a total of 133,380 stitches per min. at 100% efficiency.

The machine is designed to give a 10% increased speed over the ordinary embroidering unit by means of the delicately balanced ball-bearinged and Oilite-bushinged frame that can move either sideways or up and down—independent of the body of the machine and the stationary needles and borers—in increments of 1/160 to ¼ of an inch, up, down, or sideways as desired and as laid out on standard perforated pattern cards of the Vomag type. The use of light metals in the stitching movements also helps make the increased speed possible.

The frame can move sideways a total of 19 in. (72 quarters) and up and down a full 24 in. (24-in. span). Each needle, an inch and a half apart on a horizontal plane, can work separately on small repeat patterns, or needles can be easily removed for larger-design embroidering. Needles are fed from yarn wound on tubes.

Automatic Spanning

A significant improvement over older embroidery machines is the increased spanning speed that is possible so that downtime is minimized. Spanning is done by two men handling 15 pieces (each 40 in. wide) at one time. An ingenious system of yarn protectors keeps ends from being rubbed against and tangled. It takes only 20 min. to span up 30 pieces, which is about three times as fast as formerly.

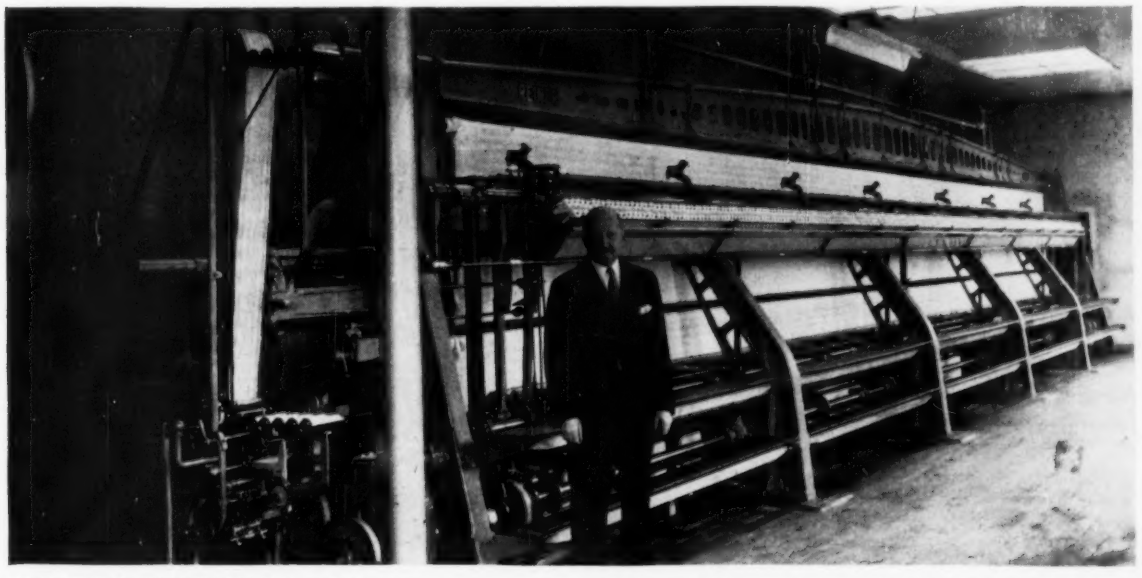
The automatic part of the spanning comes after the 15-yd.-wide fabric rolls are inside the machine—in the lower bank and top bank. A motor drive then rolls the necessary fabric up into position for embroidering. No rewinding from the top roll is necessary as the fabric is self aligning.

A 1½-hp., three-phase, variable-speed V-belt-drive motor at the pattern-card end is the only source of power on the machine. Front and rear shipper rods make starting and stopping easy from any position.

The machine weighs 15 to 18 tons and requires a trench-like foundation about 2 ft. wide and 18 in. deep. One to two complete machines are now being made per month. Deliveries for new orders are already being quoted as well over a year from now.

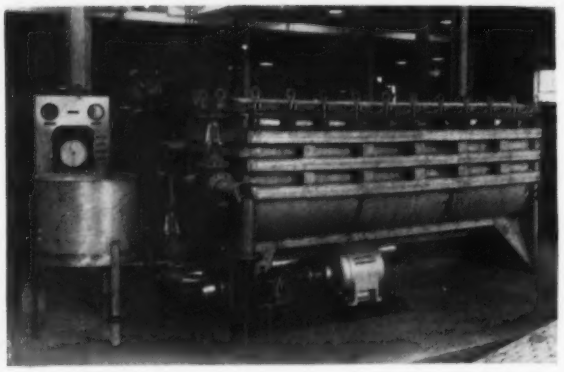
Price of the machines is $62,000. Foundation preparation by the mill before installation can run as high as an additional $1,000 expense.

Circle T-1 on Reader-Service Card



133,380 TOTAL STITCHES PER MIN. and other improvements make the new Reiner embroidery machine an efficient producer even though each 30-piece unit like this costs about $63,000 installed. Dr. Robert Reiner is standing by the machine to show how big it is comparatively.

Pressurized Wet Processing Uses Package-Dyeing Principles



OPEN-MESH GOODS in various widths can be boiled off, bleached, and dyed in this type of closed-top machine. One such unit handles up to 6,000 yd. of 60-in. marquisette; another is built to handle up to 92-in. tricot fabrics.

Two dyeing machines (one for handling marquisette and the other for tricot fabric) have been designed and built by Burlington Engineering Co., Inc., Graham, N. C., and have had extensive trials in dyehouses in the South and East. Engineered to boil off, bleach, and dye open-mesh goods such as tricot and marquisette, the machines utilize standard package-dyeing principles but on a much larger scale.

The marquisette machine handles up to 6,000 yd. of 60-in. goods, depending on the cloth construction. It has a 1,000 gal.-per-min. pump equipped with a four-way valve for reversal of flow. Flexopulse timers are used in conjunction with temperature controllers.

Designed for operation up to 240° F., the closed-type machine is built of Type-304 stainless steel or Type 316 if desired. Helicoid gauges are used. Either Allis-Chalmers or Worthington pumps are supplied, driven by Westinghouse or Allis-Chalmers motors.

The tricot machine is similar to the marquisette machine in appearance but is built to handle even wider goods. A four-way valve on this larger machine is optional.

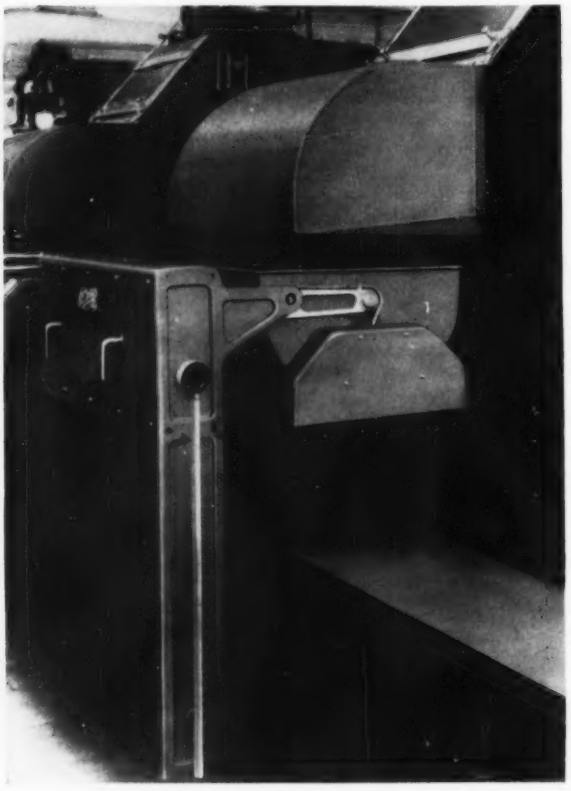
Both machines may be had without the pressure-dyeing features by plants that do not want them. Atmospheric-pressure machines have continuous one-way flow.

Taking a Sample

Sampling and dye additions are taken care of on the pressure-type machines by a vertical 3-gal. cylinder built into the system between the pump discharge and the return line. Samples are attached to a wire screen in the top portion of the cylinder. When it is necessary to take a sample, the cylinder is isolated by closing off two valves, the lid is removed, samples are lifted out, and any necessary add is made. The samples are then replaced on their bracket (above the level of the added dystuff) and the top replaced. The sample kier is then opened into the system again.

The sampling and adding operation can be done without stopping the pump or reducing the temperature inside the unit.

Circle T-2 on Reader-Service Card



Opening-Line Weighing Unit Is Accurate to Within ±1½%

Opening-room blending to within 1½% of accuracy by weight is possible with cotton, rayon, and other synthetic fibers by means of a new weighing unit that has been developed by Platt Bros. & Co. Ltd., Oldham, Lancashire, England. One weighing unit is attached to each bale-breaker delivery in the line, and it drops its stock onto the conveyor belt when all units in the line have been filled to their predetermined amount.

The unit consists essentially of a scale pan, a counterweight, and a cowl to deliver stock evenly in the scale. Weight control is obtained by a beam balance. The amount of material to be received is regulated by a moving weight on a scale arm graduated in 1-oz. increments.

The aluminum arms pivot on knife-like edges. The scale pan is mounted on ball bearings to take any swing that occurs while the pan is loading. Solenoids open the pan doors in synchronization with other units when the predetermined weight has been delivered from the bale-breaker spiked apron.

If one of the blending units fails for any reason to deliver, all the other units are automatically stopped.

The amount of stock that can be handled at each weighing can be set anywhere between 8 oz. and 4 lb.

Circle T-3 on Reader-Service Card

BLENDS are automatically maintained in their correct proportions in the opening room when two, three, or four of these weighing units are used with bale breakers.

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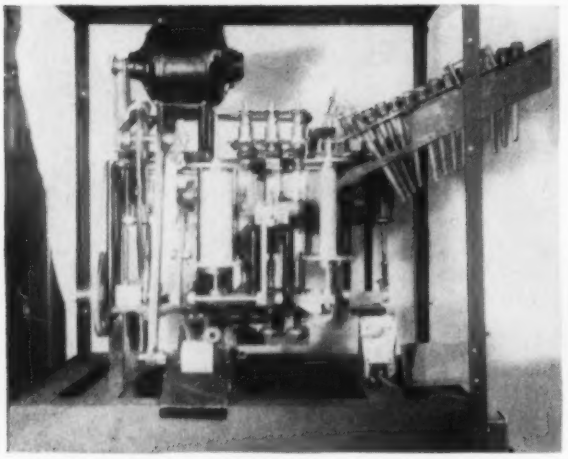
Quill Polisher and Degreaser Is Improved



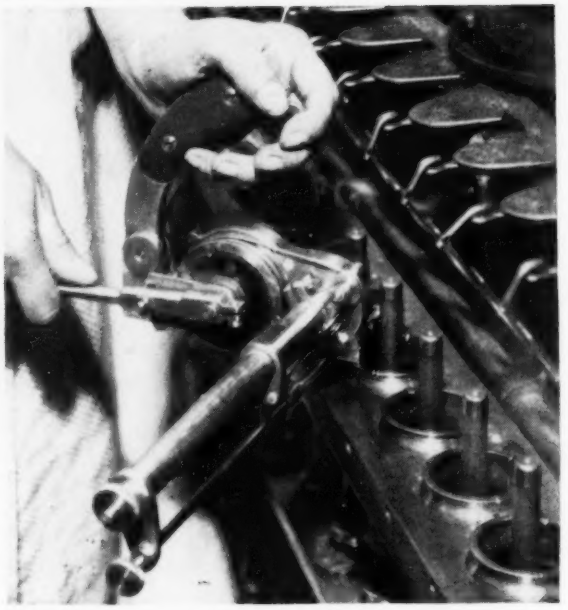
AUTOMATIC AND CONTINUOUS cleaning and polishing of quills has been made even more effective by several improvements on this machine.

Several refinements in their machine for refinishing and degreasing loom quills have been made by Glenwood Machinery Associates, Inc., 85 Chestnut St., Newark, N. J. The new Model C incorporates the following improvements:

1. A conveyor discharge has been added so that quills can be fed directly to a basket or truck.
2. Mechanical changes make possible the accommodation of the unit to different-length quills in a matter of minutes.
3. A wider range of degreasing materials and abrasives makes possible many more degrees of finishes.
4. The machine can be fed from the return conveyor of the Terrell stripper machine as well as from the rails.
5. The machine rejects quills that are badly damaged on the tips.

Circle T-4 on Reader-Service Card

Device Snaps on 50 Travelers per Min.



YOU DON'T WASTE TRAVELERS by dropping some on the floor when you are putting new travelers on your spinning and twisting rings with this device, and in addition you can snap 500 travelers on 500 rings in 10 min. when you use it. The apparatus was invented and has been patented by Francois Bobek of 15 Rue de la Moselle in Golbey (Vosges), France.

Travelers, brought through the tubular magazine automatically into position, snap over the ring when the lever is pushed down by the operator's right hand. Neither the traveler nor the ring is damaged by the action. Three models of the device are available, for use with small, medium, and large travelers.

Further information on the device is available from Rodger L. Simons, 50 Broad St., New York 4, N. Y.

Circle T-5 on Reader-Service Card

Improved Tricot Machine Knits Better Quality Faster

An improved two- and three-bar tricot machine in all gauges, Model RT-6, has been developed by Robert Reiner, Inc., 556 Gregory Ave., Weehawken, N. J. It is designed specifically to give mills both improved quality and speed of production.

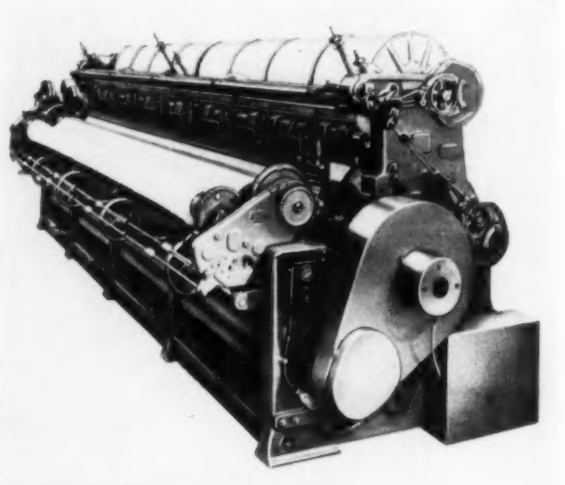
In this latest tricot RT-6 model, standard features such as automatic beam feed, positive take-up, quick stop and start, and automatic lubrication are supplemented by improvements such as lighter knitting elements, smoother motions for higher speeds, larger cams and cam rollers, and smoother guide-bar action.

The company's automatic beam-feeding device and guide-bar hangers have been improved and redesigned to insure a free-running yarn sheet that does not chafe.

For finer needle adjustment, new thrust bearings have been installed. They have more surface contact and stay in better alignment.

The RT-6 will be shown at the Knitting Arts Exhibition at Atlantic City at the end of this month.

Circle T-6 on Reader-Service Card



IMPROVEMENTS incorporated in the RT-6 tricot knitter include lighter knitting elements, smoother motions, larger cams and cam rollers, and redesigned guide-bar hangers.

CONTROLLED STRENGTH . . . At every point — the butt, the beard, the shank, — a Textile Spring-Beard Needle is strong. Precision manufacturing, checked by automatic and electronic controls assures that strength. From the special steel formula to final exacting inspection and careful packaging you can be sure of strength — and quality that means more even stitches and lower production costs. Check Textile Spring-Beard Needles in service — you'll see the proof.

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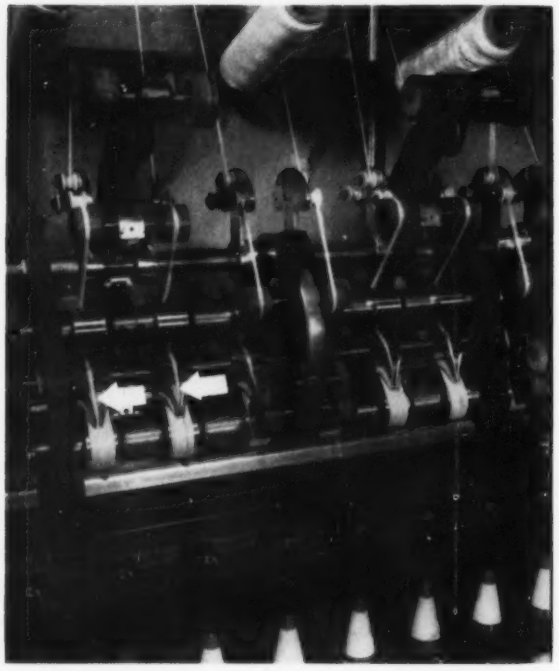
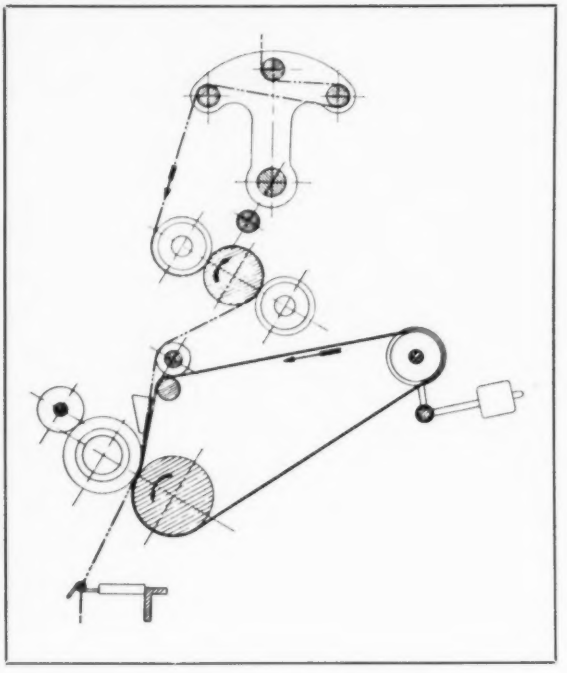
Machine Spins Staple Yarns Directly From Tow





QUALITY YARNS up to 105s cotton count can be spun directly from continuous-filament tow on this new French machine. The tow can be broken by various settings of the prismatic roll to give the fiber diagram desired when tested on a fiber-uniformity tester. The removed top front rolls show drafting taking place (arrows) immediately after breaking of the tow.

A 288-spindle and 320-spindle direct spinner has been developed in France that utilizes continuous-filament tow in the creel, and after controlled breaking of the filaments and immediate drafting from 5 to 50, spins quality yarns from 9s up to 105s cotton count. The three-in-one machine can process any type of nonplastic filament tow between a total count of 2,000 to 8,000 den.

The direct spinner has been developed by Société de Constructions Mécaniques de Stains, 81 Avenue Aristide Briand, Stains (Seine), France. Further information is available from Pierre Kaltenbach, 25 Vanderbilt Ave., New York, N. Y.

Two standard machines are available—a 3.9-in. (100-mm.)-gauge unit whose ring diameter is 2.56-in. (65 mm.) and which spins a package weighing up to almost half a pound; and a 2.9-in. (75-mm.)-gauge unit whose ring diameter is 1.77 in. (45 mm.) and which spins a package weighing up to almost a fifth of a pound. The 3.9-in.-gauge machine has a maximum of 288 spindles per unit.

How the Machine Works

The triple-purpose machine works as follows: (1) The tow, after passing through weighted holding rolls, is stretchbroken in the drafting area as it passes at slight angle over a prismatic-shaped roll with blunt cutting edges. (2) The broken-filament sliver immediately passes on to a revolving-apron and condenser area where the filaments are kept parallel and uniform as they are drafted until they are gripped by the front drafting rolls. (3) The yarn is then pulled down to the bobbin and twisted in the ordinary manner by the traveler on the ring.

Advantages of the direct spinner include (1) very few yarn breaks and thus fewer knots, (2) elimination of other yarn-preparation equipment, (3) smaller floor-space requirements, (4) capital investment much less, (5) excellent-quality yarns and fabrics that result, and (6) complete range of yarn numbers possible on the machines.

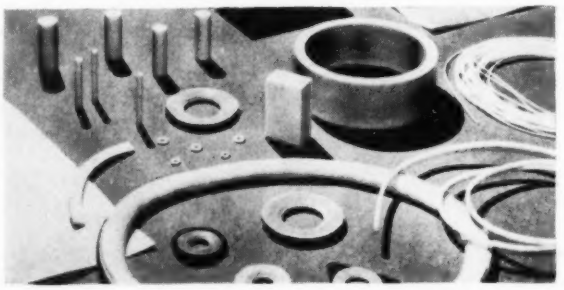
Circle T-7 on Reader-Service Card

New Plastic Bearings and Gears Have Long Life

TEFLON BEARINGS and gears that are designed to outwear similar nylon products have been developed by Abbott & Riddle, 2413 Federal St., Philadelphia 46, Pa. The new plastic development is not subject to deterioration by the action of any chemical used in the textile industry and has superior frictional qualities.

The higher original cost of the new bearing and gearing material is offset by a longer life in action.

Circle T-8 on Reader-Service Card



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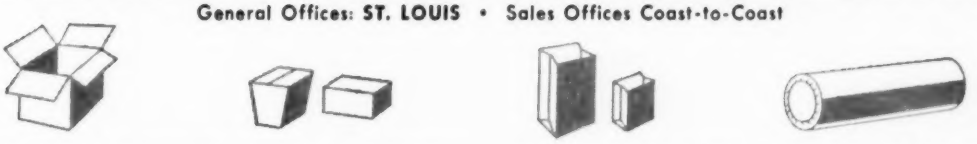

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Portable Ultrasonic Unit Homogenizes 5 to 7 Gal. per Min.

COLLAPSE OF COMPONENT PARTICLES is instantaneous when uncooked sizing or other emulsifiable solutions are directed through the head (arrow) of this small "jet" homogenizer. Low initial cost, easy maneuverability, and a rapid rate of production are other advantages of the unit.

A portable homogenizer weighing only 130 lb., which at a rate of 5 to 7 gal. per min. mechanically breaks down particles suspended in liquid into homogenized or emulsified form, has been developed in England and is now available from American Ultrasonics Co., 198 Pacific St., Newark, N. J.

The unit, known as the Rapisonic, works on the principle of the ultrasonic Pohlmann whistle. Within its bell-shaped resonant bell, low-frequency ultrasonic vibrations are brought about by a jet of the solution to be homogenized colliding at 200 psi against a blade, which vibrates at its natural frequency of about 22 kc.—well above the normal upper limit of human hearing of 15 kc. Homogenization takes place as hollow, unbroken particles in the solution collapse and cause instantaneous local pressures of about 30,000 psi. to be built up on both sides of the blade. Cavities in the solution are thus eliminated.

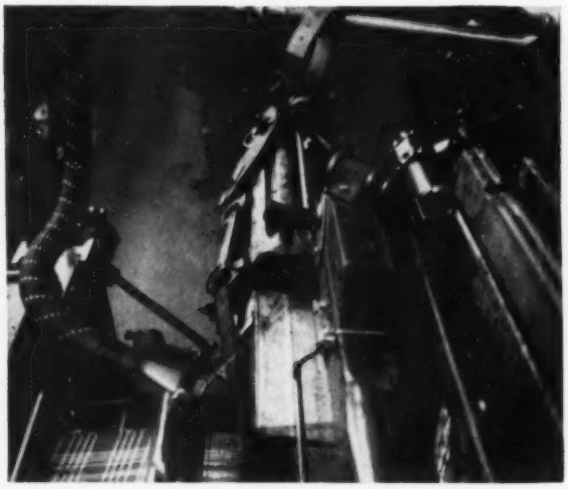
The frequency at which the blade vibrates is adjustable. The internal parts of the ultrasonic head can be dismantled by hand, and cleaning and reassembling is the work of only a minute or two. Parts that come in contact with liquid are of stainless steel. Other parts are of light-weight alloys insofar as possible.

Five advantages of the ultrasonic homogenizer cited especially by the manufacturer are (1) fast emulsification at a rate of 320 to 400 gal. per hr.; (2) a minimum of power consumption because of the small 2-hp. motor that, for small batches of warp sizing, needs to run only a few minutes each hour; (3) particle sizes (produced as small as 1 millimicron) that give excellent solution stability; (4) low initial cost; and (5) complete portability that allows the unit to be carried around and clamped to the side of any mixing kettle.

The unit can be fitted with a noncontaminating rubber suction tube that replaces the standard 2-ft. 6-in. suction-intake pipe. This hose will allow an un-homogenized solution to be drawn into the pump and on into the mixing vessel after it has been broken down by passing through the ultrasonic device.

Circle T-9 on Reader-Service Card

Portable Suction Unit Prevents Jerked-in Filling

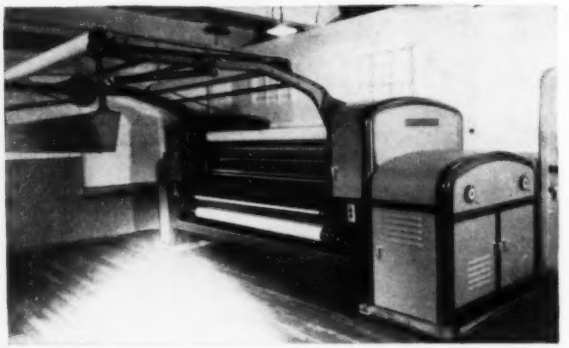


INOPERATIVE FILLING YARN IS HELD by air suction away from the shuttles of a box loom weaving a multicolored fabric by means of a portable suction-head and flexible-tubing arrangement that has a nozzle placed at the selvage up near the fell of the cloth, and thus jerk-ins are prevented. The device, of British manufacture, has been developed by Matthews & Yates Ltd., Swinton, Manchester, England.

The nozzle and amount of suction are adjustable. The fan component is mounted on a steel backplate located (in England) on the arch under the dobby head, and it is driven by a direct-coupled fractional-horsepower motor. Power consumption is approximately 100 w.

Circle T-10 on Reader-Service Card

Redesigned Wool Napper Gives Reproducible Results



WIDER VARIETY of fabric constructions can be finished on the redesigned Simplex Model-L3 napper. Simplicity of operation and easy interchangeability from a double- to single-acting napper are other features.

A redesigned napping machine of the 24-roll, double-acting type for use on woolen fabrics as well as on wool, part wool and cotton, and other blended-fiber blankets, has been brought out by Davis & Furber Machine Co., North Andover, Mass. Available widths are 80, 90, and 100 in.

The new napper has a totally enclosed drive and gears and has been simplified in other ways also: sensitive dial controls, elimination of change gears, antifriction bearings, easy changes of cloth speed while the napper is in opera-

DURKEE ATWOOD V-BELTS

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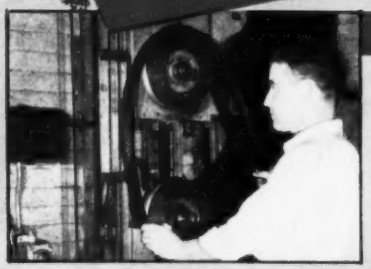
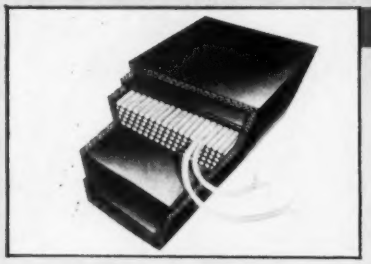


VERTICAL MATCHING ASSURES EQUAL POWER TRANSMISSION

Durkee-Atwood's new vertical V-belt matching machines eliminate the "sag" error always present when V-belts are matched on horizontal matching equipment. Calibration of true running length assures equal power transmission from all belts on multiple belt drives. The machines also test for vibration and possible internal imperfections.



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High-tenacity Cordura® rayon cords give Durkee-Atwood Industrial V-Belts longer life, less stretch, and greater shock resistance. Use of this revolutionary new cord material is another one of the reasons why D-A Industrial V-Belts are guaranteed to satisfy on any drive.

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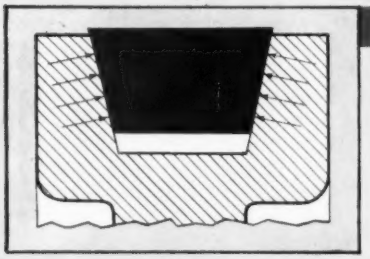

STRAIGHT SIDEWALLS—FULL GROOVE CONTACT

Durkee-Atwood V-Belts are manufactured with straight sidewalls to maintain full groove contact at all times giving positive drive action. Straight sidewalls reduce slippage and assure smooth, efficient power transmission. The load is distributed evenly over the entire thickness of the belt giving it longer life.

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D-A Industrial V-Belt performance and life are thoroughly proven facts—and on-the-job records back this up. Durkee-Atwood engineering and research, use of the finest materials, strict manufacturing controls and "Vertical Matching" have brought forth industrial V-belts outstanding in quality, whether for OEM or replacement drives.

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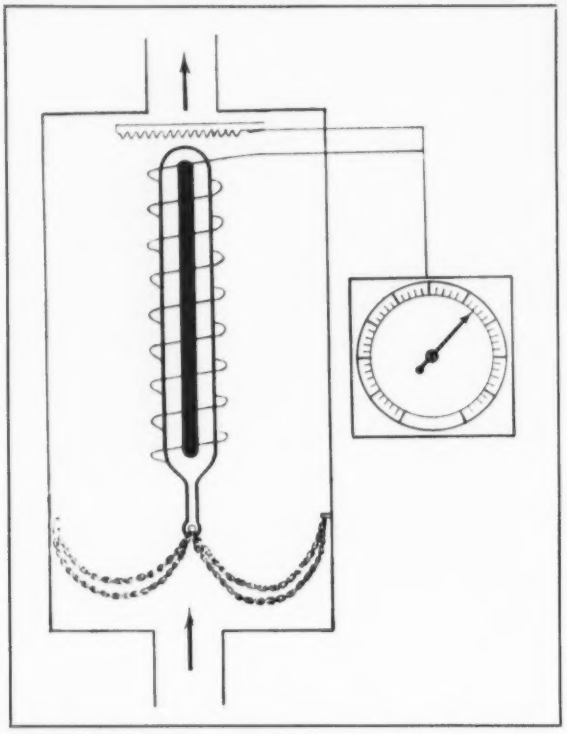
tion, easier lubrication and cleaning, and simplified changing from a double-acting to a single-acting napper.

A predetermined finish can be automatic with the new napper. Because of the control dials and the lack of change gears, guesswork on the amount of nap given previously to a certain construction, or needed in the future, has been removed. The amount of energy applied in any run can be reproduced later on; so goods will not be over- or undernapped, and refinishing time can be saved.

Circle T-11 on Reader-Service Card

New-Model Instrument Controls Density of Flowing Liquids



CONTROL OF DENSITY is provided for, as well as indicating and recording, by this improved Densitrol instrument, whose controlling element is shown here in cross section.

The Princo Densitrol, a density-sensitive instrument that can directly control density in such liquid processing operations as blending, mixing, proportioning, diluting, or concentrating, has been developed by Precision Thermometer & Instrument Co., Brandywine St., Philadelphia 30, Pa. This latest improvement in the company's line allows for automatic savings in time and materials.

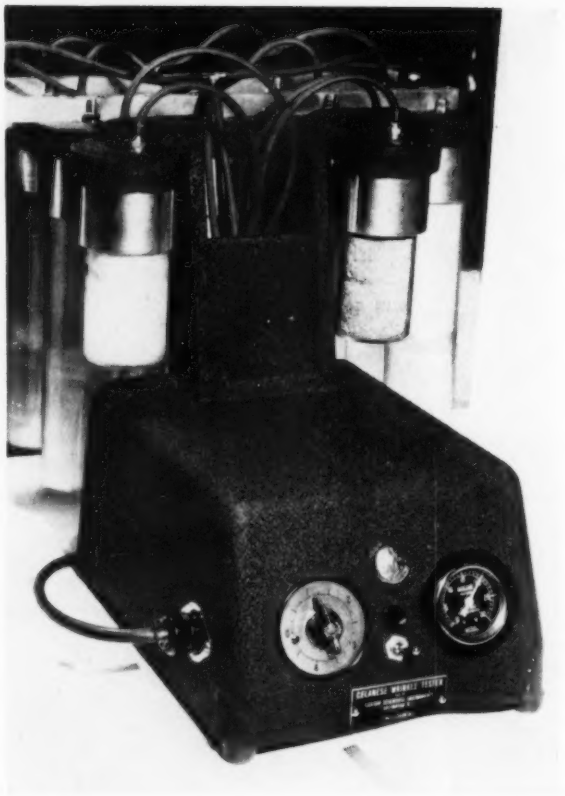
Any calibration can be furnished—degrees Baumé, specific gravity, etc.—within the range limits of 0.2 to 0.005 density or equivalent full-scale change within the limits of 0.5 to 3.5 density or equivalent.

Accuracy for all ranges is ±3% of range, or 0.0002 density, whichever is greater. Sensitivity for all ranges is ±½ of 1%.

Automatic compensation for change of temperature in the sampled liquor is provided for. Models are available for operating temperatures up to 350° C. and operating pressures up to 600 psi.

Circle T-12 on Reader-Service Card

Celanese Wrinkle Tester Gives Results in an Hour



CLENCHED-FIST type of wrinkle test on fabrics is done under controlled conditions in this random type of wrinkle tester that is now generally available. The cycle for collapsing and reinflating alternately can be set for 2½ or 5 min., as desired. Duration of the over-all test can be varied.

To make possible the mill evaluation of resilience and wrinkle behavior of fabrics under conditions similar to those that occur in actual use, Custom Scientific Instruments, Inc., Box 170, Arlington, N. J., has put on the market commercially the Celanese wrinkle tester. This new piece of laboratory equipment was invented by Dr. Reiner G. Stoll and was described and on display at the Textile Research Institute annual meeting in New York last November.

The new tester gives highly reproducible wrinkle results on 10x10-in. swatches in an hour's time. It is listed at $850.

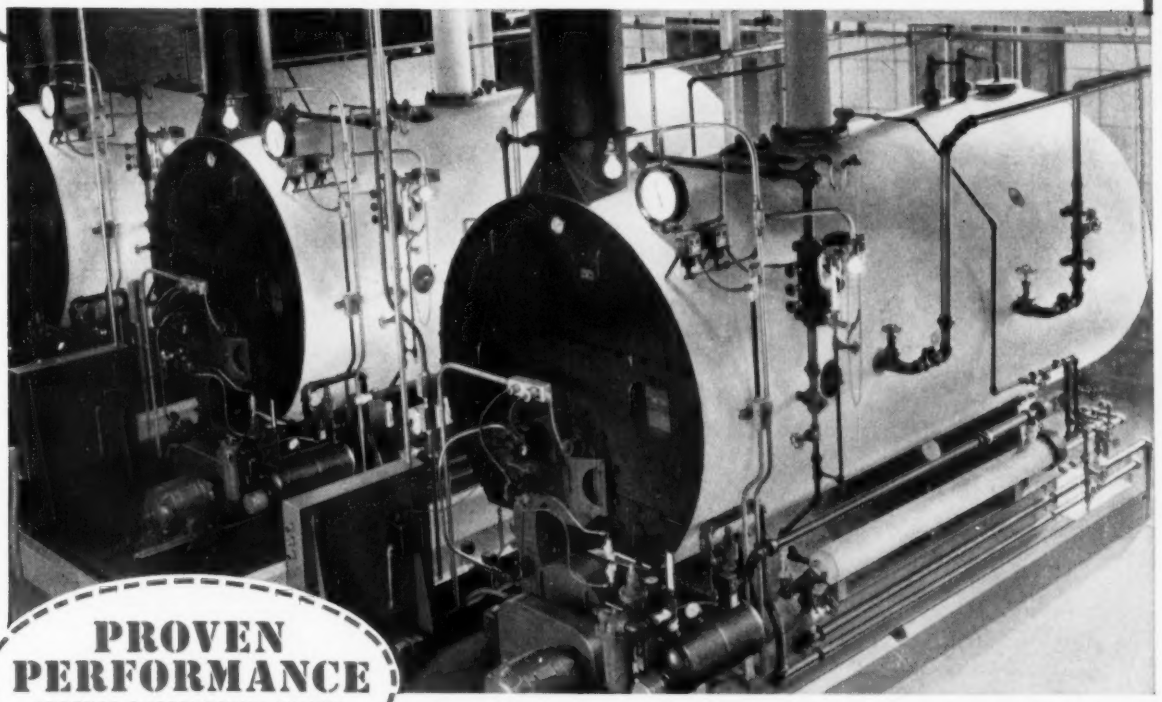
The apparatus consists essentially of an air system that alternately pumps the air out of a group of specimen tubes into another set of specimen containers. Inside the tubes are sealed-in rubber diaphragms connected to the air system; these collapse and wrinkle one set of fabrics in a random manner, under the humidity conditions desired, while the other set of fabrics can relax.

The cycle for collapsing and reinflating alternately can be set for 2½ or 5 min., as desired. A timer in the circuit determines the duration of the over-all test.

Evaluation of the amount of fabric resilience or wrinkling is best done visually.

Circle T-13 on Reader-Service Card

Cleaver-Brooks boilers save $25,000 per year for Hoosac Mills...pay for themselves in 2 years' time!



PROVEN PERFORMANCE

ANOTHER OUTSTANDING REPORT FROM A CLEAVER-BROOKS OWNER

After installation and starting service was completed, a check was made on boiler output. Tests indicated efficiency exceeded the guaranteed 80%. After eight months' operation without tube cleaning, stack temperature showed no noticeable gain, indicating high efficiency had been maintained. *Planned and installed by Frank I. Rounds Co., Newton Highland, Mass.*

INSTALLING 3 Cleaver-Brooks self-contained boilers at Hoosac Textile Mills, New Bedford Division, was a major step in ending boiler worries. Hoosac can count on yearly savings of $25,000, and they're set up for future expansion as well.

Before deciding what type of boilers to install for replacing old, hand-fired boilers, Hoosac carefully considered these factors:

1. **Efficiency of steam generation** — the cost for supplying 12,000 lbs. of steam required each hour at peak capacity for heating and processing.
2. **Saving labor costs** — through safe, automatic operation.
3. **Cleanliness** — important to textile manufacture.

A study of past performance and prominence of similar units in the industry — showed that Cleaver-Brooks self-contained boilers would fill the bill.

Guaranteed 80% thermal efficiency was one of many influencing factors in selecting the 3 Cleaver-Brooks 150 hp. boilers. Even with loads as low as 30% of rating, these boilers operate with a flat 80% efficiency. (Hoosac operates their plant over widely fluctuating loads, particularly in summer.)

That they attained their objectives is borne out by these results — *results which showed the boilers paid for themselves in 2 years' time.*

1. **$15,000 savings in fuel** — fuel cost studies showed 275,000 gals. of oil at 5½¢ per gal. provide steam for a year's operation. Same steam formerly required 2,000 long tons of coal at $15.00 per ton.
2. **$10,000 savings in labor costs** — fully automatic operation minimized boiler maintenance. Personnel were then available for productive plant work.
3. **Cleanliness** — modern boiler room proved more efficient than previous cluttered arrangement. Hand firing, removal and disposal of fly-ash was eliminated.

In addition to these substantial savings, the installation provided for economical future plant expansion. At present, boiler operation is rotated so all three periodically receive the same service and maintenance.

Cleaver-Brooks boilers are showing similar savings in many other businesses. Investigate — write for Catalog AD-100 and complete information on standard size oil, gas, combination oil/gas fired Cleaver-Brooks boilers, 15 to 500 hp., 15 to 250 psi.

CLEAVER-BROOKS COMPANY
Dept. D, 361E. Keefe Ave.,
Milwaukee 12, Wis., U.S.A.

Cleaver-Brooks

ORIGINATORS OF THE SELF-CONTAINED BOILER

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For more information, write direct or use Reader Service post card.

256-Spindle British Uptwister Averages 65 Lb. per Hr.

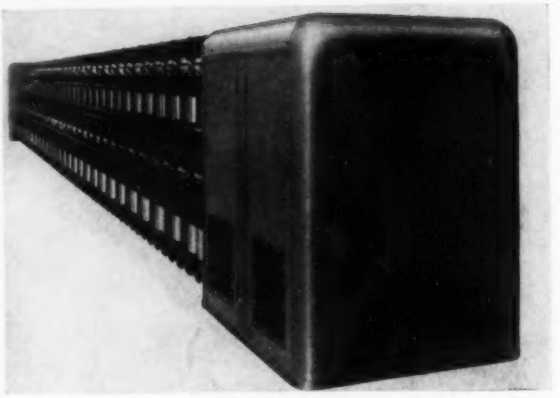
A large-package double-deck uptwisting machine, known as the MU3, has been developed in England by Platt Bros. & Co. Ltd., Oldham, Lancashire. It is designed to throw long lengths of knot-free yarn for tire cord, for example, at a profitable production speed. The 256-spindle unit handles yarn from 4½-lb. double-flange bobbins direct from the filament-yarn manufacturer and twists single ends at an over-all rate of about 65 lb. an hr.

Each tier of bobbins is driven separately in an arrangement that relieves starting torque and insures uniform acceleration without undue overloading of the motors. One-shot lubrication in the driving and gearing components eases maintenance of the frame.

The machine has roller-bearing, center-suspension spindles. A single tape drives four spindles. Spindle speeds up to 5,200 rpm. are possible. There are individual spindle brakes. Twist range is from 4½ to 53 tpi.

The MU3 machine is handled in the United States by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.

Circle T-14 on Reader-Service Card



DOUBLE-DECK UPTWISTER throws filament yarns for use as twisted singles yarn or for further processing on a ply-yarn or cabling machine.

Special-Size Tanks of Glass Fiber Are Inexpensive

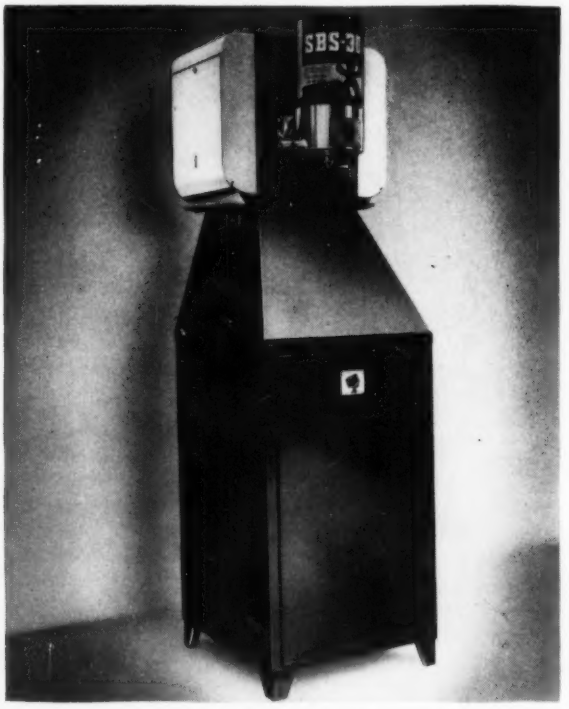
CORROSION-RESISTANT GLASS-FIBER TANKS in special sizes that do away with the high cost of special molds have been put on the market by Laminex Corp., 994 Jefferson St., Fall River, Mass. The new tanks, fabricated from glass-fiber flat stock, cost less than aluminum and far less than stainless-steel tanks to do the same job.

Sizes up to a 12-ft. length or width by 4-ft. depth, or 12-ft. length and width, are available. The product is straight-sided and square-cornered, with all joints pressure-bonded. Wall thicknesses increase for maximum strength proportionately as size and capacity are increased. Flat top flanges vary in width up to 4 in. and in thickness up to ½ in.

Specific advantages of the tanks are (1) noncorrosiveness, (2) electrically nonconductive, (3) can withstand temperatures above boiling point, (4) can withstand all commonly used acids in normal concentrations, (5) high impact resistance, (6) light weight, (7) ease of cleaning, and (8) ease and speed of repair.

Circle T-15 on Reader-Service Card

Portable Cleaning-Up Equipment Saves Employees' Steps



WATERLESS WASHSTATION with a foolproof dispenser of the company's SBS-30 waterless skin cleanser has been put on the market by Sugar Beet Products Co., Waller and Niagara Sts., Saginaw, Mich. The unit is designed to "bring the washrooms to the worker" and so saves them steps.

The washstation dispenses the correct amount of cleanser to the user, provides for paper towels to remove the dirt and cleaner, and has a receptacle to receive the waste towels. The unit requires no plumbing and does not have to be bolted to the floor. So it is as mobile as the lightest machine.

Circle T-16 on Reader-Service Card

TEXTILE EQUIPMENT NEWS

(Continued on page 296)

In Industry after Industry

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Give this great YALE truck every test you know. Run it fully loaded on ramps, indoors and out. See the power it delivers... the fuel economy it gives. Let operators test it for smoothness...for maneuverability... for safety...and you'll see why it's the standout truck of this or any other year.

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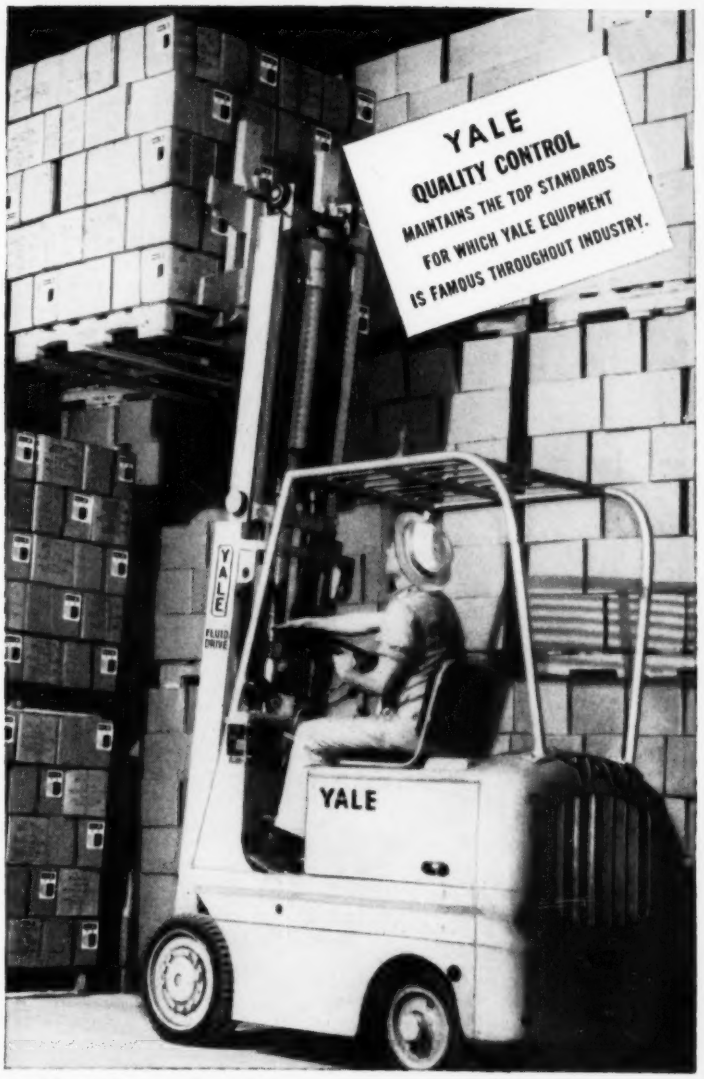
3. Automotive Type Brakes with extra braking surface
4. Shockless steering...for greater operating ease and safety
5. Hypoid Gears oil-sealed against dirt and dust, give drive 30% more strength against shock loads

*Registered trade mark



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NEW *Dyes* AND *Chemicals*

"Custom-Built" Naphthols Now Available

A new line of mixtures of naphthols and stabilized diazos has been made available by Hilton-Davis Chemical Co. Div., Sterling Drug, Inc., Cincinnati, Ohio. Known as Spectrosols, the new dyes are companion products to the line of Spectrolene colors introduced by the company in 1951. The newly developed mixtures of naphthols and stabilized diazos are prepared on a "custom-built" basis for individual mills. Dyes are made up fresh to mill specifications.

Circle D-1 on Reader-Service Card

New, Cheaper Plasticizer Has Low Extractibility

A new polymeric vinyl plasticizer, Paraplex G-53, offers high resistance to extraction by such materials as oils, gasoline, hot soapy water, and detergents; has little tendency to migrate; and possesses good processing qualities, according to the makers, Rohm & Haas Co., Philadelphia, Pa.

Circle D-2 on Reader-Service Card

New Vat Yellow Has Versatile Applications

A new anthraquinone-type vat color very close in shade to the standard Spanish yellow, Ponsol Yellow PG is suitable for application to both cotton and rayon in the form of yarn or piece goods. Because of its particularly good fastness to washing, it is recommended for materials intended for work clothing, towelings, sheetings, and similar items. Good fastness to chlorine, peroxide bleaching, hot moist pressing, crocking, and water spotting render this product valuable for the recommended and similar end uses.

Ponsol Yellow PG double paste will also find use as a shading component in mixtures where added brightness is desired and as a base for rich brown and orange shades. The makers, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., state that the color has excellent stability when reduced at 120° F. At 140° F. the stability is good although the shade of the reduced vat becomes slightly redder and duller.

The color is suitable for application by pigment, reduced, or continuous methods. It exhibits very little sensitivity to changes in temperature or concentrations of caustic soda. Metals have a negligible effect on the shade. Under artificial light the shade appears redder, while soaping causes a noticeably brighter shade.

Circle D-3 on Reader-Service Card

New Dispersant Aids Dye Solubility

A new product of Amalgamated Chemical Corp., Philadelphia, Pa., called Dynadye-V, is said to help prevent spotty dyeing of Dacron. A solution of a sodium salt combined with suitable surface-active agents, the product encourages complete dye solubility. When correctly used, the product is said to eliminate tarry deposits and end spotty blotches because of its extreme solubility. Dynadye-V has been successful commercially for packaged yarns, skeins, piece goods, and finished goods. Combined with selected acetate dyestuffs, under ordinary dyeing conditions no difficulties were met in getting excellent wet and dry crockfastness and extreme depths of shade, the makers claim.

Circle D-4 on Reader-Service Card

New Fast Red Azoic Resists Plissé Caustic

A new stabilized azoic-type color made by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., is recommended for printing both cotton and rayon that will eventually be used for dress goods, draperies, tea towels, and numerous novelty items. Diagen Red FB is suitable for plissé printing of cotton where it retains its brightness and blueness of shade after the caustic treatment. The color possesses good fastness to chlorine, dry crocking, dry cleaning, hot moist pressing, water spotting, and washing, the makers claim.

In physical form the color is a soluble powder specifically prepared to produce grit-free printing pastes. The product is readily soluble, penetrates well, and possesses good stability when made up into stock solutions. After the color is printed, the fabric is dried and then subjected to acid ageing, where it shows good development at relatively short ageing times.

Circle D-5 on Reader-Service Card

New Wetting Agent Has General Applications

A new penetrant-wetting agent made by Hart Products Corp., New York, N. Y., is said to be unusually effective and of low cost. Penetrex S is a readily soluble sulfonated condensation product. It is compatible with neutral, alkaline, or acid solutions, soaps, or salts. The makers recommend the product for general use.

Circle D-6 on Reader-Service Card

Simultaneous Finishing-Aftertreating Process for Directs on Rayon Uses Cuprofix, Aquex

A new finishing process that is said to render direct-dyed rayon fabrics completely washable has been developed jointly by Aquex Development & Sales Corp., Whippany, N. J., and Sandoz Chemical Works, New York, N. Y. Process patents have been applied for, and Aquex Corp. is drawing up licensing agreements.

The process is said to offer (1) excellent dimensional stability, with low residual shrinkage and no progressive shrinkage on repeated launderings; (2) excellent colorfastness (as tested by AATCC Wash Test No. 3) with no color bleeding in washing machines or in commercial laundries; (3) excellent fastness to light, with direct dyes instead of vats; (4) excellent retention of physical properties (tensile strength and flex abrasion resistance).

The key components of the process are Aquex BNW, a finishing resin of the Aquex company, and Cuprofix, Sandoz's dye-fixing agent.

The Aquex resin is a chelated vinyl-acetate copolymer complex; Cuprofix is a complex copper-resin compound.

In combination with each other and with the other agents used in the process, the Aquex resin and Cuprofix are said to create a chemical bond that is responsible for the colorfastness and other durable results.

Experimentation on the new process has been in progress for several months. After successful laboratory testing, the process has proved itself in commercial production.

Standafin T Conc.

Tops

for taffeta finishes

All indications point to the continued popularity of taffetas as a high style item.

For that dry, crisp, swishy taffeta hand, from papery thin to pleasing softness, Standafin T Conc. provides the answer in finishing of taffetas, failles, shantungs, etc. Slip-proofing with no mark-off or effect on shade or luster are added features imparted by Standafin T Conc.

Application is made from an aqueous bath on conventional finishing equipment such as a quetsch or padder. No curing is required.

Our technical staff will be glad to demonstrate the advantages of using Standafin T Conc. for your taffetas.

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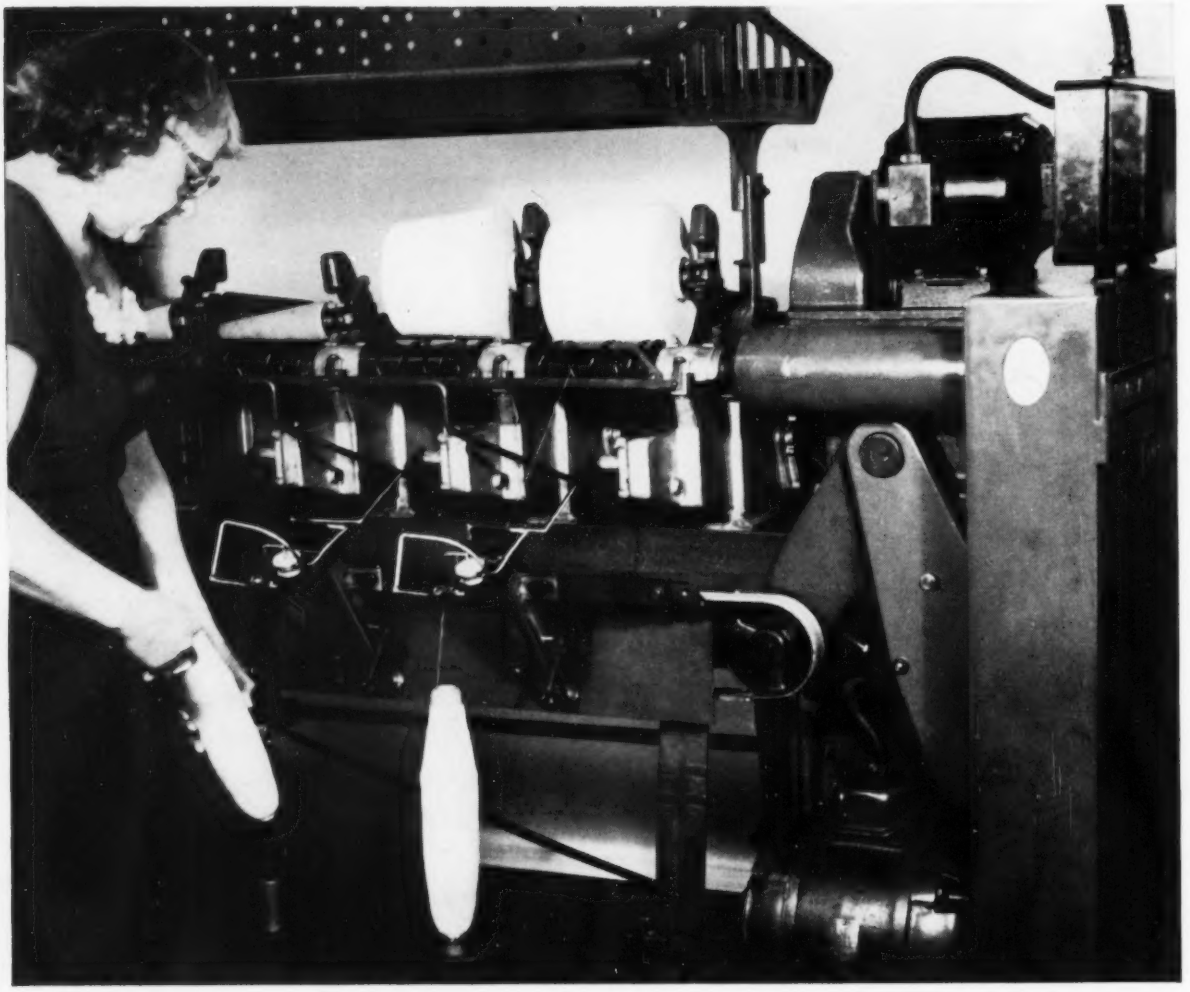

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LETTERS FROM OUR READERS

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330 West 42nd Street, New York 36, N. Y.

Round Table

IT'S BETTER NOT TO OPEN BURNING COTTON BALES

Dear Editor:

I have read the letter on the objections to high-piled storage from a fire-hazard point of view in the January issue of TEXTILE WORLD, page 161.

The subject is covered quite thoroughly, but there is one minor point where we would differ. We do not suggest opening bales of burned cotton until the fire is thoroughly extinguished, as we have found that the bales are quite likely to burst into flame after the ties are removed. This is especially true when smoldering is going on at the underside of the bales.

If the ties are removed, the only way to turn the bale over is by using some sort of implement like a pitchfork. Then again, if the ties are removed and a bale requires further extinguishment, application of water spray wets the bale more thoroughly and thus greater expense is required for drying before the cotton is re-baled.

Considerable thought and study is being given to materials handling and various methods of high piling by the Factory Mutual Laboratories, and we should have concrete suggestions to offer within a short time.

R. G. SHEPHERD
Factory Mutual Engineering Div.
Boston, Mass.

WE STAND CORRECTED—

Dear Editor:

In your February issue, on p. 99 of the Review and Forecast section, there is a statement to the effect that our Auto-Coner is being delivered to mills and that progress reports on this machine should be available soon.

That statement is not correct. Development of the Auto-Coner is being continued, but it will be a very considerable length of time before the machine will be available.

W. S. WARREN
Universal Winding Co.
Providence, R. I.

HOW TO INTERPRET CONTROL CHARTS

Dear Editor:

Much has recently been written about the use of control charts on production processes. [See Mr. Rudnick's article on page 104.] The growing number of textile mills using these charts is ample proof that they can be applied to the textile industry. However, some textile men might still be confused about exactly what a control chart does.

Textile men don't have to be convinced that variation exists in textile products. Furthermore, textile men realize that it is almost impossible to check all of the product from a particular process; so the necessity of sampling arises.

Sampling presents two problems: (1) Do the samples represent the batches of material from which they are drawn? and (2) Is the variation within a particular sample normally expected in the particular process? The control chart solves both these problems.

Without going into the mathematics behind such control charts, we can say they have lines that are called control limits. If the samples fall within the control limits for a process, we know the variation in the process is normal and the sample is a good estimate of the processed material. On the other hand, if the samples fall outside the control limits, we know the variation in the process is not normal. In other words, the control limits separate chance variation from variation caused by an outside factor —variation that requires attention or correction.

Statistical laws of chance are used to compute these control limits. Fortunately, many years ago the gamblers of Monte Carlo hired mathematicians to devise tables of chance. These tables in recent years have been simplified to make it easy for the quality-control people to calculate process control limits.

The common form of control chart used in textile mills is the X-Chart; each point plotted is the average of two or more individual samples. For instance, for a chart

(*Continued on page 204*)

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Snitzle has a date right after work!"

How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

These Ideas Can Help You Get Cooperation From Your Workers

► There's no standard formula for effective leadership, but applying the principles outlined here will help you win the whole-hearted employee support that is the mark of a successful leader.

By M. A. CROSS,
Director of Industrial Relations, Dan River Mills, Inc.

THERE PROBABLY ARE NOT MANY supervisors—good ones, at least—who, in their reflective moments, would not agree that their success depends upon the efforts of the people they supervise. Granted that a supervisor must have the technical know-how to analyze and correct the myriad of production, quality, cost, and other problems that press against him, he still has to depend on someone else to get the work done. If he tries to shoulder himself any important part of the physical work that needs doing, it's almost axiomatic that he's not a good supervisor, and "he's not long for his job."

Clearly, his responsibility is to see that the work is performed in the most efficient manner possible, and for this he depends on the cooperation of his employees. The time is past when any other method can bring sustained satisfactory results.

How To Go About It

How do you go about the business of getting cooperation? There is no simple answer, because winning the whole-hearted support of your employees is the essence of leadership. There can be little debate that effective leadership takes many different forms. No one to my knowledge has successfully dissected the quality of leadership and come up with a standard formula that X factors of personality plus Y traits of character equal the good leader.

Look at the examples in your own company. In the spinning room, perhaps, is a foreman who quietly goes about his business, unhurried, never ruffled, seemingly too easy-going; but he's getting his job done with the full cooperation of the people in his room. In the construction gang, on the other hand, is a hard-bitten, bluff old so-and-so who, to the casual observer, seems to blow his top with the regularity of a certain well-known geyser. Yet he, too, gets his job done well and has the respect of his employees.

You can cite examples endlessly from industry, from public life, from the field of sports; but always the common denominator that makes men effective leaders is so elusive as to defy detection. So there isn't an easy solution to this problem of getting cooperation.

Here Are Some Principles

That doesn't mean that there have not been a lot of conversation, numerous conferences, and an unlimited number of articles on the subject. I doubt if there is anything entirely new that can be said. However, even on a question about which all of us have read and heard a good deal, it will not be wasted time to take another look. This matter is so important that a reminder of a few principles we know to be sound may lead to renewed determination to build those same principles into our everyday supervisory habits.

We all profit by experience—our own and others'. Certainly that is true in this area of getting cooperation. Recently I have been reading the biography of a great military leader in the War Between the States—General Thomas J. Jackson, the famous and well-loved Stonewall. From his experience, we can draw many lessons in leadership, but for the present purpose, let us highlight just one.

It must first be said that Stonewall Jackson knew his job. Trained at West Point, later a military instructor at Virginia Military Institute, he was an avid student of military history and strategy. His knowledge of war bred confidence in the men whose lives depended upon his ability to outguess, outmaneuver, and outsmart the enemy. He was a hard taskmaster who demanded and got the impossible. He marched his men all night, he fought them against overwhelming odds, he had nothing but scorn for a man who hesitated before the withering fire of massed troops. But for all his toughness, he was not callous.

He Looked After His Men

The fact is that he was always concerned with the welfare of his troops. He made sure they were properly trained. In camp, he looked to their creature comforts. Burdened by limited resources, he exerted his utmost efforts to see that his army was adequately fed, clothed, and shod. He willingly accepted the burdens of men with less fortitude and stamina than himself. On one occasion, after his troops had marched several days over rugged country in rain and sleet, he served sentry duty alone through a wretched night to enable others to rest. Always, he looked after the well-being of his army. The men knew of this concern for their welfare. They repaid him for it in full measure when they did battle for him.

Stonewall Jackson's success was immeasurably aided by the whole-hearted cooperation that he earned, in part, through his earnest concern for the welfare of the men who looked to him for leadership. In any supervisory position you hold, people look to you for leadership. They expect you to be concerned with their welfare. Indeed, they must feel rather helpless if you are not. What, then, can you do to make sure that your employees know of your interest in their well-being?

Be Interested

Not many days will go by when a little alertness on your part won't re-

(Continued on page 206)

Kinks AND SHORT-CUTS

How We Vary Patterns From the Same Tricot Beam

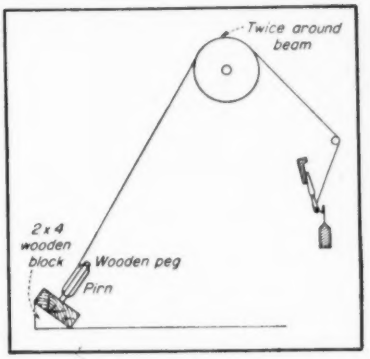
Many fancy effects can be produced on tricot machines with the use of dope-dyed and space-dyed yarns. On our sample tricot machine we've rigged up an auxiliary to the beam so that we can use full warps with fully threaded guide bars in the ground yarn for an unlimited number of samples. The attachment saves a great deal of time and labor in warping for small samples.

Where colored threads are required, remove the threads from their original location and place them in the next guide eye, either to the right or to the left. The colored yarn is wound onto tubes supported on a rack made from 2x4-in. stock. The tubes are pushed onto 3-in. pegs made from ½-in. round dowelling and set equidistantly along the 2x4. The top of the peg is slightly chamfered to take the tube.

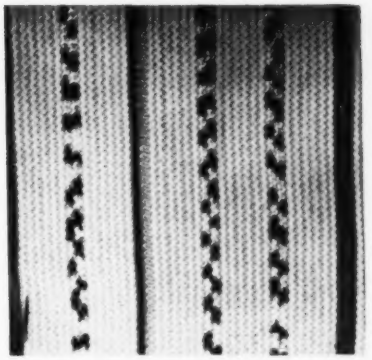
The 2x4 should be tilted at a 45° angle to allow for proper unwinding. The threads, wound around the top beam twice to insure proper tension, are then threaded over the tension rail and into the empty guides.

After the desired length of sample has been knitted, note the pattern-wheel studs and the threading. Then, when the approved sample comes back, the new beam can be made without double-threaded ends.

Zigzags, diamonds, checks, and other small patterns can be knitted when the above arrangement is used.



FANCY ENDS can be introduced in a tricot fabric by allowing some ends to run double and feeding the fancies as shown above. The arrangement is intended to speed sample work.



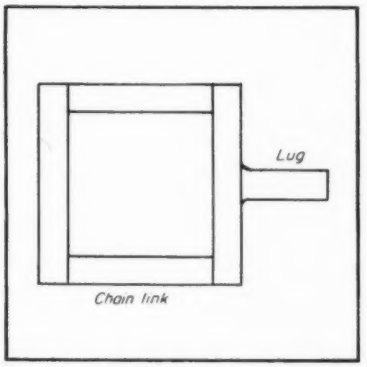
THIS DESIGN was made with a 0-1, 1-0 back-pattern wheel and a 2-3, 1-0 front-pattern wheel. Space-dyed yarn and resist-dyed acetate were used as the effect threads to gain an unusual effect.

Use a Counter To Measure Knit-Garment Production

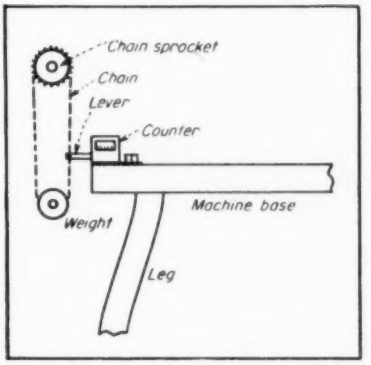
Our knitters spent some time counting the garments they made each shift. We saved them lots of time by fixing a lever-operated counter to the base ring of our circular knitting machines.

A lug was brazed onto one side of a chain link in the counter chain that is used to control the length of each garment. The counter was fixed so that the lug moved the lever at each revolution of the chain.

Our knitters read the production at the end of each shift and turn the counter to zero, ready for the next shift. *Dan Singer, Philadelphia, Pa.*



BRAZE a short lug to the side of a chain link, as shown above, then . . . . . .

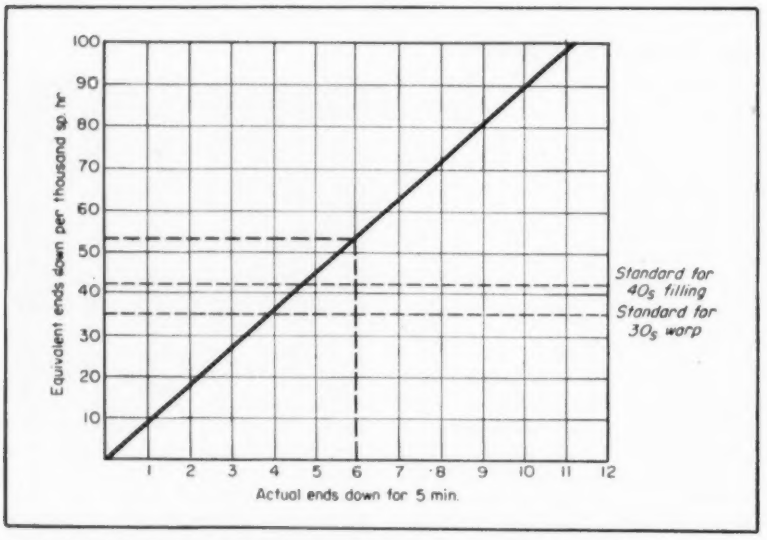


FIX A COUNTER to the machine base so that the lug strikes the counter.

Quick Method of Checking Ends Down in Spinning

We find a quick, random ends-down test gives us a reliable indication of how well the spinning is running on any yarn number. The method is based on a short-time check on one spinner's job.

A spinner at the end of a patrolling cycle is told not to piece up any ends on any of her frames for a period of 5 min. unless the thread-guide lappet is raised on an end that is down. The overseer or second hand walks through the set of frames for 5 min. and counts the ends down. After an end is counted, the thread-guide lappet is raised as a signal to the spinner that the end may be pieced up. To assist in keeping the record, a chalk mark is made on the creel above each end counted. This mark permits an accurate test on each frame in the set. The ends down on the set can be changed to an equivalent and comparable ends down per thousand spindle hours by the use of the simple chart shown.



YOU CAN MAKE a chart for any number of spindles you want to check. This chart was set up for 10 sides of 136 spindles each. The example shown, for a 5-min. test, indicates equivalent ends down of 53, which is above normal for the type of yarn being spun.

The values plotted on the chart are derived as follows: One spinner's job is 10 sides, spindles per side are 136, total spindles are 1,360. Minutes tested is 5, decimal hour tested $(5/60) = 0.083$.

Equivalent ends down per thousand sp. hr. =

$$\frac{\text{Actual ends down} \times 1{,}000}{0.083 \times 1{,}360}$$

For example: Actual count for 5 min. is 6 ends down.
This figure is equivalent to

$$\frac{6 \times 1{,}000}{0.083 \times 1{,}360}$$

= 53 ends down per thousand sp. hr.

The figures given here may be changed to allow the chart to be used on any number of spindles or for any period of time. The dotted lines showing the standard ends down for each yarn number give a warning when end breakage is excessive. In laying out the chart, mark only the values for the first and the last number of ends down listed. The line drawn between these two values locates correctly the intermediate values for the other numbers of ends down listed.

Several tests can be made on different sets of frames spinning the same yarn number. The results are then averaged and the equivalent values found on the chart. This procedure will give a good over-all picture of ends down in the room. *E. H. Helliwell, Newburyport, Mass.*

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You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1953.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
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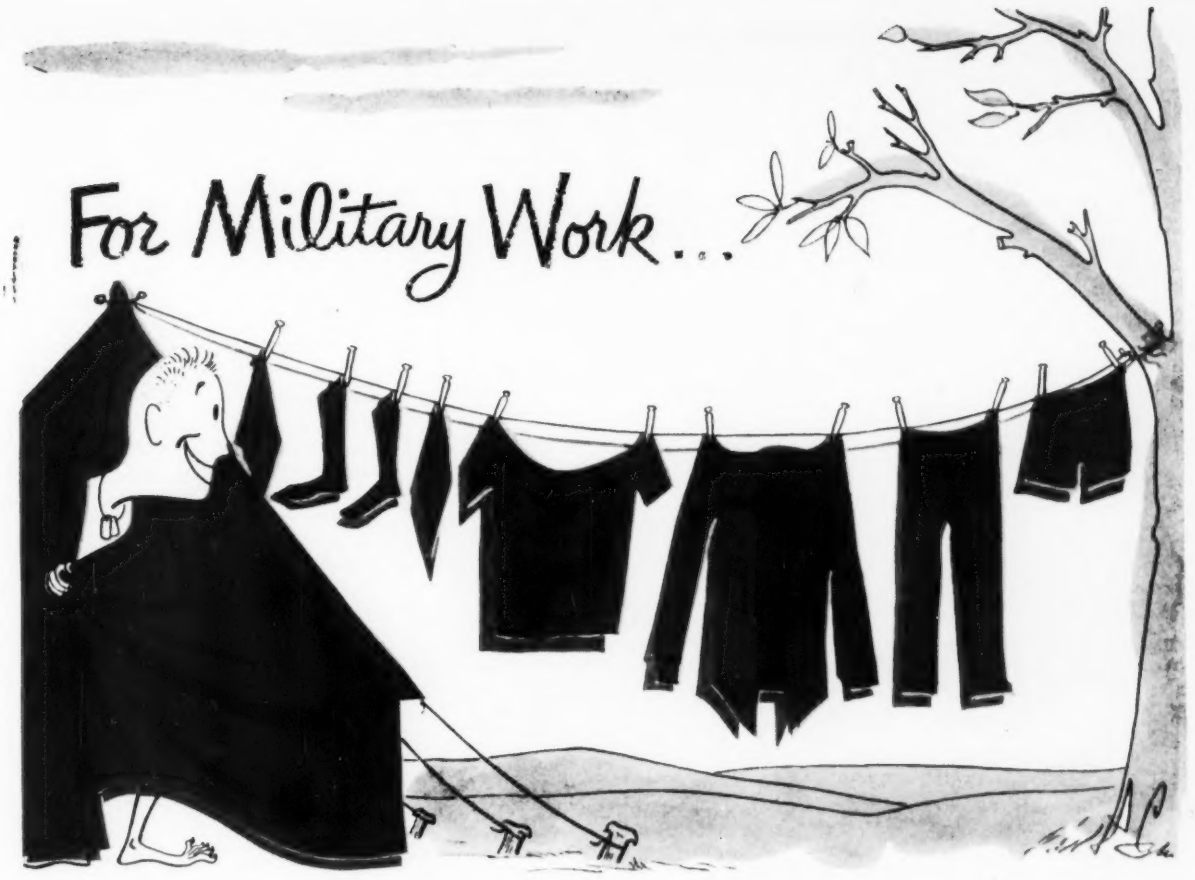

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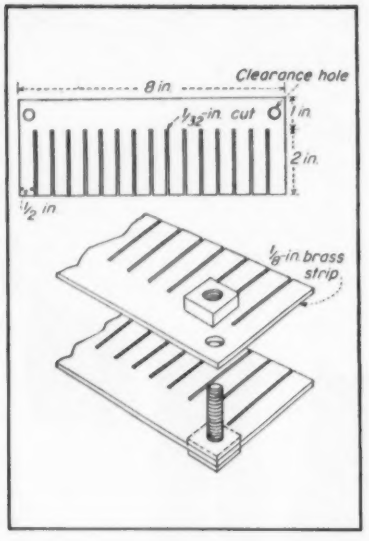
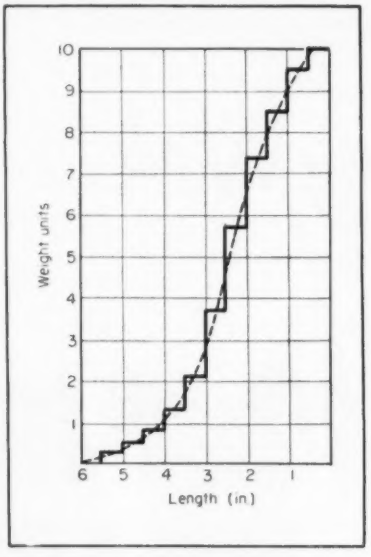
Here's a Quick Method of Getting a Fiber Array



FIBER-LENGTH distribution can be determined with this device, which consists of two pieces of slotted brass between which a draw of top is laid for chopping.



FIBER ARRAY is shown by the dotted lines. The "steps" indicate the weight of the half-inch cuttings. If you require the mean length, it is necessary to cut only one strip.

To obtain fiber distribution of wool tops you can make a simple device from two lengths of brass each 8x3x⅛ in. This method of top testing will give a quick and reliable picture for setting your rolls.

Divide the brass strips into equal sections by 15 saw slots 1/32 in. deep and ½ in. apart. Drill clearance holes at each end of the strips.

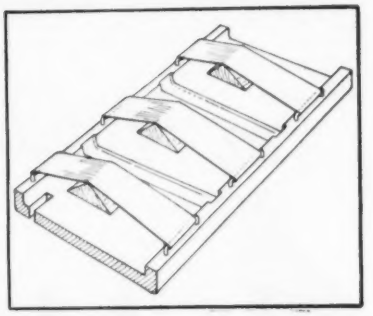
A draw from the top is laid between the strips and the two strips are clamped together with two small nuts and bolts. By drawing a razor blade between the slots, you can cut the fibers into ½-in. lengths. When the plates are taken apart, the short lengths of fiber are gathered and weighed.

From the results of the weighings, make up a chart on squared paper in the form of a histogram to show the distribution of the fiber lengths. The weights are plotted vertically and the length intervals horizontally. The profile of the fiber figure is obtained by joining the class mid-marks. (The mid-point of the 0-to-½-in. group is ¼.)

If you require only the mean (not the full fiber array), weight the draw from the top and cut only the 0-to-½-in. strip from the base. The mean length in inches is then—

$$\frac{\text{Total weight of draw}}{2 \times \text{weight of 0-to-}\tfrac{1}{2}\text{-in. strip}}$$

Block Under Top Clearer Keeps Waste Out of the Work



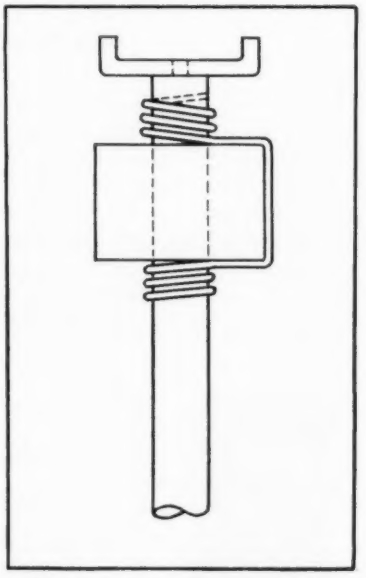
WEDGE slips under clearer, is fastened there, and then rests on the back of the top roll and keeps waste from eyebrowing.

Does eyebrowing bother you? It did us—until we fixed up our clearers.

We put a piece of triangular molding under the clearer cloth of our top clearers. The wooden molding can be tacked or glued and should be as wide as the clearer fabric. We use a molding 1¼ in. across the bottom and ¾ in. to the peak.

In operation, part of the molding rests on the back of the top roll and keeps clearer waste from eyebrowing. The device can be used on any type of front roll on roving or spinning frames. *J. B. Boyter, Dallas, N. C.*

Try a Pipe Cleaner On Your Lifter Rods



NO MORE LINT or fly can get inside the bearing on your lifter rods if you attach a common pipe cleaner as shown in the sketch. This simple idea can prevent breaking a lot of bobbins and parts. *H. Hughes, Boston, Mass.*

Best-Kink Award for February

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for February, according to TEXTILE WORLD reader-judges, was:

"Moving Cards? Try This Method"

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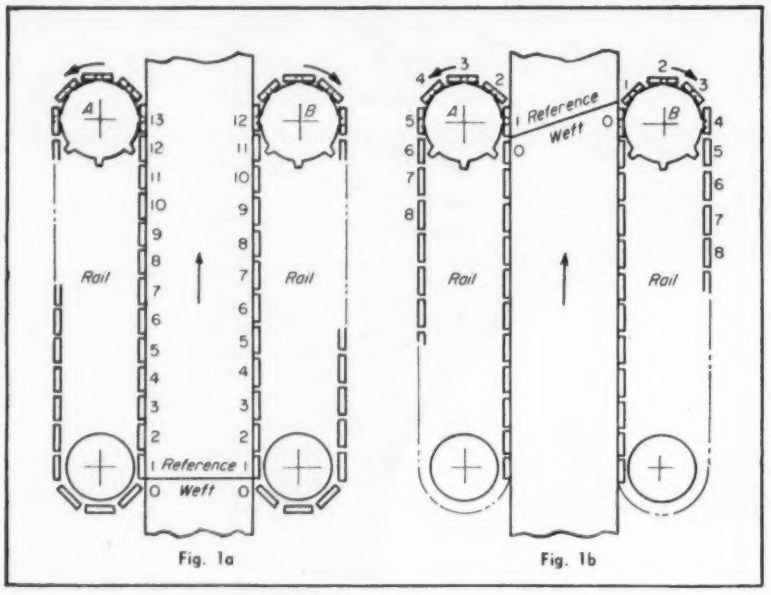
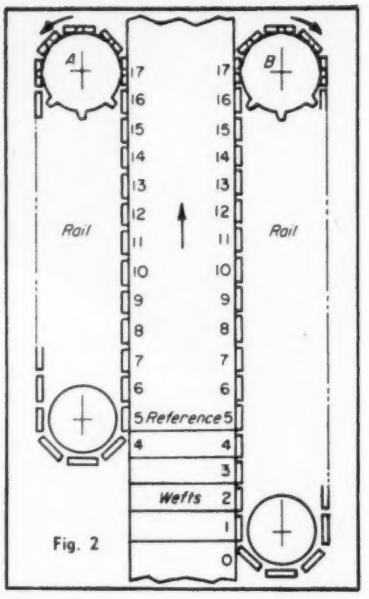
How To Reduce Skew on Tenter Frames



SKEWED FABRIC results, as seen by checking the reference weft, when tenter clips are removed from the worn side to keep chain lengths the same.



NO SKEW forms when both chains are at the same stage of wear.

A tenter frame can cause a skewed weft, but only if the chains are worn unevenly—not because one chain happens to be longer than the other. The first two sketches show a tenter frame with unevenly worn chains, although the owners have kept the lengths the same by removing clips from the worn side. A reference weft has just started into the frame at clips 1-1 in Fig. 1a, and after drive sprockets *A* and *B* have made a given number of revolutions to advance the same number of clips in each chain, the weft emerges in Fig. 1b with a skew. The worn side travels further for a given number of clips passing the sprocket. When the clips go around the sprocket, they are momentarily crowded together slightly by the sprocket teeth.

Fig. 2 shows a tenter with one chain longer than the other, but both chains are at the same stage of wear. Clips 5-5 will close on the reference weft, and then it will move evenly up to the release so that no skew forms.

How much skew can a tenter frame cause? A 60-ft. clip tenter has about 180 4-in. clips on each run. If the bushings on each clip of one chain wear $\frac{1}{8}$ in., the skew approaches 3 in. Here are some tips:

Never replace a single chain of a worn pair or you will have the worst possible skew-forming condition.

Do not alter the proper chain tension to try to make both chains the same pitch. The increase in chain tension over a good normal has to be quite large before it lengthens a chain noticeably. Many newer frames have spring-adjusted chain tension devices that are an aid in keeping equal tension on both chains.

Sometimes mills interchange worn sections between chains in 10- or 20-ft. lengths so that each clip will have the same pitch as its opposite in the other chain.

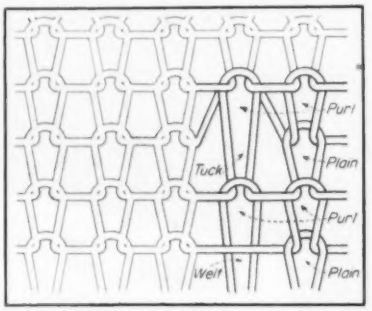
If you do this, you'll find each chain must have exactly the same number of clips or the matched sections will get out of step. *William O'Keefe, Rutherford, N. J.*

Stitch Diagrams Help Us To Analyze Knit Fabrics

In analyzing complicated knitted outerwear fabrics, we found that a printed stitch diagram saved us time and made the analysis more successful.

We had several hundred sheets of paper lightly mimeographed with the basic jersey-stitch structure. The overlappings of the needle loops and sinker loops are omitted.

As the fabric is examined or unraveled, the notation is made on the sheet. The design and the machine settings can be obtained from an examination of the sheet. *Dan Singer, Philadelphia, Pa.*



MACHINE SETTINGS can be obtained from this sheet after the stitch notation has been taken. A purl-stitch fabric containing a welt stitch and tuck stitch is shown.

Approximate Size Formula

There's no exact rule you can follow, but an approximate formula for sizing singles spun yarn is 1 lb. of starch and 1 oz. of lubricant per gallon of size.

The formula is generally halved for plied yarns, or sizing is omitted entirely.

Cotton and spun rayon give approximately 100% wet-size pickup; worsted and spun acetates give about 70%; spun nylon and other hydrophobic fibers give only 35%. These figures can be used to figure your pickups. *H. C. Olsen, New York, N. Y.*

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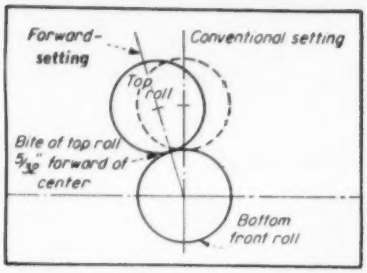
Five Ways To Reduce Ends Down on Roving Frames



NEW FORWARD SETTING on roving frames reduces top-roll laps and ends down when staple-synthetic fibers are run.

We had an excessive number of ends down on our roving frames when we ran certain types of synthetic fibers. The majority of these ends down were caused by top-roll laps.

The thing that helped most to reduce ends down was a drastic and unorthodox setting of our top front rolls. Our conventional setting was just slightly forward of the bottom-roll center to prevent rocking of the roll when the frame was started and stopped. We increased this forward setting of the front top roll to ⅝ in. beyond the bottom-front-roll center. This setting appeared to hold the fibers more firmly in the body of the strand and prevented stray fibers from sticking to the top roll and causing roll laps.

Other changes also partially helped reduce the ends down: increasing the diameter of the top rolls where composition cots are used, and making sure that all cots are finely buffed before they are put in the frame. Maintaining humidity at 55 to 60% r.h. and keeping the frame tension fairly tight also assisted in getting our ends down back to the normal low point. *E. H. Helliwell, Newburyport, Mass.*

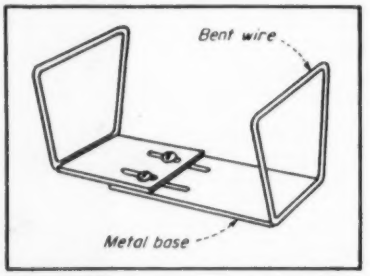
Turn Your Rib Cuffs Faster With This Frame

To save making a welt and to give a double thickness of cloth, we fold our rib cuffs and overlock them to the bodies.

After the cuffs have been cut, we employ a person to double the fabric ready for seaming.

We increased this girl's production and made her job easier by making a frame and fixing it to her bench.

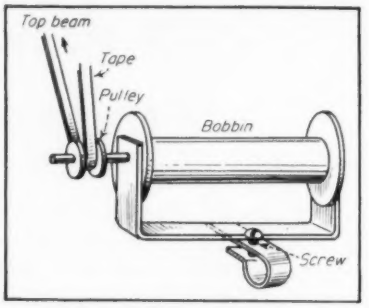
Two wires were bent into a trapezoid and soldered to a metal base. Holes were drilled in one base. Two slots were made in the other base to correspond with the holes. The two bases were then clamped together and fixed to the bench. The slots allow the bases to be adjusted for different-size cuffs.



CIRCULAR-KNIT CUFF is stretched over this wire frame. The bottom of the cuff is then doubled to the top of the frame and the cuff is slid off.

The operator draws the knitted tube over the frame. She then takes the bottom end of the tube and lifts it to the same level as the top of the tube. The doubled cuff is then slid off the frame and sent to the sewing room. *Dan Singer, Philadelphia, Pa.*

Individual Yarn Take-Up Is for Tricot Machines



EXTRA TRICOT ENDS can be wound onto this bobbin. The device is fixed to the starting rod opposite the spare end. The tape drive must be very loose.

We sometimes find a surplus end of yarn on our tricot beams. To avoid this end becoming entangled with the threads going to the needles, we made a device for drawing it off separately.

A flanged bobbin is mounted in a steel frame. The bobbin is supported by a rod that runs through the bobbin and through two holes in the frame. A small pulley is fixed to one end of the rod.

The unit is screwed onto the starting rod that runs across the front of the machine, opposite the extra end of yarn.

A tape is passed over the top beam and around the pulley. As the beam turns, the loose yarn is drawn off the beam onto the bobbin. As the yarn tightens, the movement of the bobbin is stopped.

The belt must be adjusted very loosely so that it slips when the yarn becomes taut. As the yarn slackens, the pulley is free to turn again and wind up the loose yarn.

How We Store Our Allen Wrenches

Some of the small bench lathes in our maintenance shop are supplied with a set of three Allen wrenches as standard equipment. These wrenches were always getting lost, mainly because there was no proper storage for them. Here's how we solved the problem:

We drilled a series of holes in the bench tops to take the Allen wrenches. The benches upon which the lathes stand are of wood with a galvanized steel covering. The wrenches are dropped into the holes, where they lie flush with the bench tops and offer no obstruction to brushing when the bench is cleaned. Each lathe is fitted with a drill chuck, and the key for this is stored in a hole in the bench top in a similar manner.

The hole diameters chosen require that the wrenches be pushed into their holes, a precaution that prevents their rattling. Only sufficient holes to accommodate the standard wrench set are drilled. An empty hole denotes a missing wrench. *Clifford T. Bower, London, England*

HOLES IN THE BENCH accommodate a set of Allen wrenches. Tight fits prevent rattling.

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Special Paddle on Drill Makes Paint Stirring Painless

Paint manufacturers urge users to "Stir Well Before Using," and there is no doubt that thoroughly stirred paint gives a more uniform coat. Unfortunately, paint stirring is a tedious task and is often neglected by the maintenance man who wants to get on with the job.

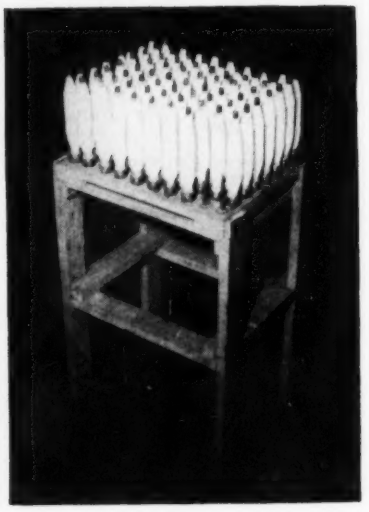
Power stirring of paint is quick and thorough and requires that a drill press of some kind be available. A portable electric drill on a stand can be used, as shown in the illustration, but a special form of paddle must be used to avoid slinging paint out of the can at high speed.

The paddle shown is made from a $\frac{3}{8}$-in. strip of steel secured to the end of a $\frac{1}{4}$-in.-dia. rod with two nuts. The ends of the paddle are twisted slightly in opposite directions like a propeller. The amount of twist should not exceed $\frac{1}{4}$ in. from the horizontal, because the turbulence produced at the high speed of an electric drill is considerable.

Run the propeller in the paint can for a few minutes, and work it up and down with the drill feed lever. The contents will be mixed as thoroughly as can be obtained from 15 min. of hand stirring. *Clifford T. Bower, London, England*

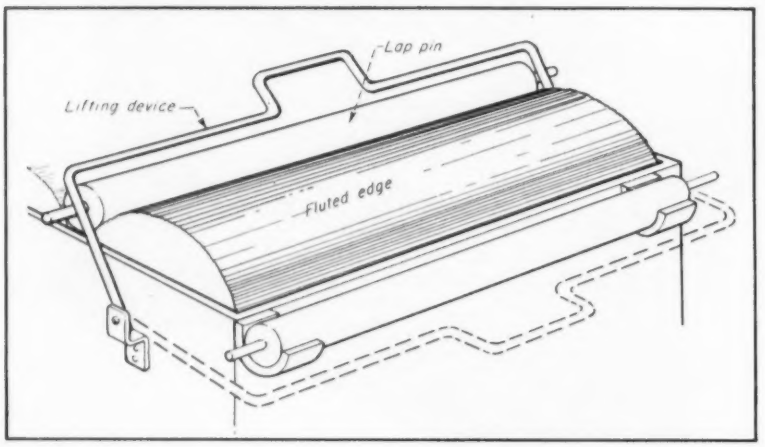
PROPELLER-LIKE PADDLE can be attached to a portable drill to stir paint.

Keep Quills Neat



THIS QUILL RACK, designed and shop-made at Aldora Mills, Barnesville, Ga., makes for good housekeeping at the loom. The board holds a total of 80 quills in rows 8x10. The quills fit over large nails driven from the underside of the board. The boards are filled from the quill carriers and eliminate quill boxes in the aisles.

Lap Pins Replaced With Handy Lifting Device



OUR LAP PINS are put back on the lap rolls after a doff with this simple lifting device. The solid lines of the device show it in the position of lifting the lap pin back onto the lap rolls from its holder.

The device is made from $\frac{1}{8}$-in. flat stock $\frac{3}{4}$ in. wide. It is mounted in a bracket on each side of the calender. When not in use, the rack hangs down at the front of the picker. *Walter Watts, Charlotte, N. C.*

How To Estimate Your Kettle Volume

You often have to estimate quickly how many gallons there are in a kettle. Here's a trick that may help.

The number of gallons per inch of height is equal to one-half the square of the kettle diameter in feet.

For example, a kettle of 36-in. dia. would give the square of 3 ft. (9) divided by 2, or $4\frac{1}{2}$ gal. for every inch. *H. C. Olsen, New York, N. Y.*

We Use Fluorescence To Check for Register in Printing

Our old method for checking prints for register was the commonly used "Woods unit." This machine must be close to the fabric, the operator must stoop to use it, and its field of view is limited. Many defects can pass unseen when this unit is used.

To get around this difficulty, we made our print shop, in effect, a dark room. We installed a number of Sylvania "black-light" tubes in our standard fluorescent fittings.

To carry out the scheme we made all our print pastes fluorescent by addition of fluorescent materials such as Leucophor. Of course some of our dyes are already fluorescent in their undeveloped state.

Now our operators can see each print as it rolls off the machine. A view from selvage to selvage is much better for constant surveillance of the process.

The black-light tubes give enough visible light for the operators to work safely and comfortably. Eyestrain is eased.

We arranged the tubes so that only the fabric and the upper portion of the machine are exposed to direct radiation. No toxic effects have been noticed.

PFIZER CHEMICALS for the TEXTILE INDUSTRY

How Can They Help You?

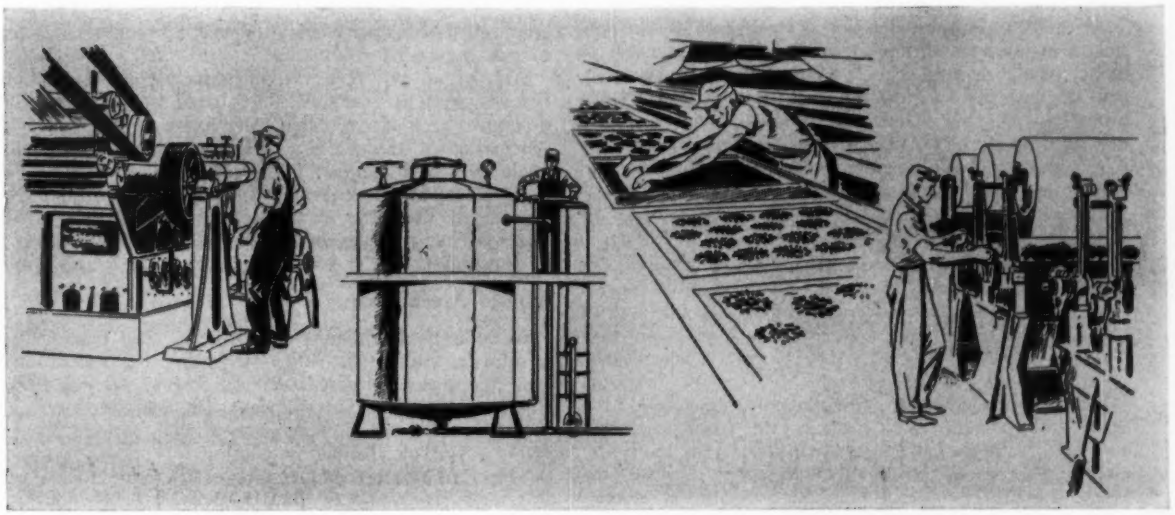
PFIZER GLUCONIC ACID, Sodium Gluconate, Ammonium Gluconate and Glucono Delta Lactone are extremely mild, non-toxic and non-corrosive. The sequestering ability of the gluconate radical plus their mildness make them highly valuable to the textile industry. They make possible clearer, sharper colors in dyeing by inactivating trace metals and are used as iron sequesterants in kier boiling and mercerization. Ammonium Gluconate and Glucono Delta Lactone prove ideal as acid forming catalysts for printing pastes.

PFIZER OXALIC ACID ranks high in the textile industry as a remover of rust spots and as a bleaching agent. This acid and its derivatives are also utilized to advantage in the preparation of alum and chrome mordants for dyeing.

PFIZER CITRIC ACID AND SODIUM CITRATE are becoming increasingly important in many textile processes because they form water-soluble complexes with metallic ions, such as iron and calcium, in neutral or slightly alkaline solutions. Being a mild organic acid, Citric Acid is also of interest as an acidifier in dyeing.

Write Department T for Bulletins #6, "Ammonium Gluconate and Gluconic Acid in Textile Printing," #27, "Glucono Delta Lactone in Acid Colloid Resins," #33, "Gluconic Acid and Derivatives," #34, "Oxalic Acid."

CHAS. PFIZER & CO., INC.
630 Flushing Ave., Brooklyn 6, N. Y.
Branch Offices:
Chicago, Ill., San Francisco, Calif., Vernon, Calif., Atlanta, Ga.



Manufacturing Chemists for Over 100 Years **Pfizer**

Exploring

The Textile Community

Burlington Believes in Economic Education Down the Line

By MILDRED BARNWELL ANDREWS

▶ The company takes the employees into its confidence where important business facts are concerned. This program could be used as a model by any mill that wants to impress workers with their stake in the company's operations.

HIGH ON THE LIST of facts-to-know in the life of every individual is "Where does the money go?" or, conversely, "Where does the money come from?"

In big or little business operations, those associated with them get along better and have more interest in the present and future success of the business if they are taken into the confidence of those who know such facts.

How Burlington Does It

A long-range and continuing program of this sort has been under way at Burlington Mills Corp. for some time, and it is comprehensive enough to be used as a model for other companies to study and perhaps emulate. The economic-education project in general is under the Industrial Relations Dept., whose director is in the main office at Greensboro, N. C. It touches the 34,000 people employed by the company's nearly 80 plants and is participated in by top executives, supervisors, and employees.

At the beginning of each year a conference on the subject of business conditions, led by a division manager or higher official, is held at each plant. Spencer Love, chairman of the board and founder of Burlington Mills, sometimes leads the discussion. Then the supervisory personnel attending such meetings hear business analyzed by an outstanding textile executive well versed in national and international business trends.

Reports Are Down to Earth

No matter who leads the discussion, these are not academic conferences in the least. They are down-to-earth news reports of the company's annual reports and of operating experiences of the past year. As far as possible, a complete picture of past, present, and future business conditions is presented.

Almost every issue of the company's magazine, the *Bur-Mil Review*, carries a message from management on business conditions, an editorial that treats in some way with the American system of business, or an illustrated article covering some economic phase of the company's operations. Among the latter stories have been articles that covered waste control, new plants and expansion programs, machinery obsolescence, the why and how of advertising, the stockholder's stake in the company, and the future of man-made fibers. Each year it has been the company's practice to publish a condensed version of Burlington Mills Corporation's annual report in the *Bur-Mil Review* for all employees to read.

Techniques Are Varied

Special treatment is given to explaining the operation of certain departments of the mills. During this year a program has been designed to acquaint all employees with Burlington's Methods and Standards Dept., its purpose and method of operations. The basic part of this program is a film written and prepared entirely by the staff of that department. Plans include a showing of the film to all employees, plant by plant, the showing to be followed by a discussion from the floor.

Bulletin boards and posters are used to get the message over that management and worker are partners in a real business. At every employee meeting and at conferences on all levels of the company's training programs, Bur-Mil's economic facts of life are reiterated.

Outside Help Is Used

Burlington also uses various plans for intra-plant communication offered by other sources. In 1952, it put to use the program "In Our Hands" that was originated by Borg-Warner and Inland Steel and made available to industry by the American Economic Foundation. A selected group of employees got a preliminary briefing and then took over the program and presented it to other employees. A movie and a flip-board added to the interest. The program, still at work at Burlington, has a few more months to run before its completion.

Also begun last year was the sequence on "How Our Business System Operates." Originated by Du Pont, the program was made available to industry by the National Association of Manufacturers. The presentation is usually made by a staff member of Burlington's Industrial Relations Dept. to employees in small group meetings. By January of this year it had reached nearly half of all supervisors and employees and is expected to be completed by the middle of the year.

Movies Are Shown

In addition, Burlington has for years been making use of movies dealing with the free-enterprise system and how it operates. Harding College, Searcy, Ark., and the *Encyclopaedia Brittanica*, Chicago, Ill., each produce and furnish such movies, which are shown periodically to employees at all Burlington plants.

The Burlington economic-facts-of-life project pays off two ways. It convinces the employee that he, not just management and the stockholder, has a heavy investment in America's business future that is incentive enough to want the right to work. And through the dissemination of up-to-date information about the company itself, its plans, operations technique, and other management policies, the program creates a strong bond of understanding and sincere pride in Burlington Mills as a good company to work for.

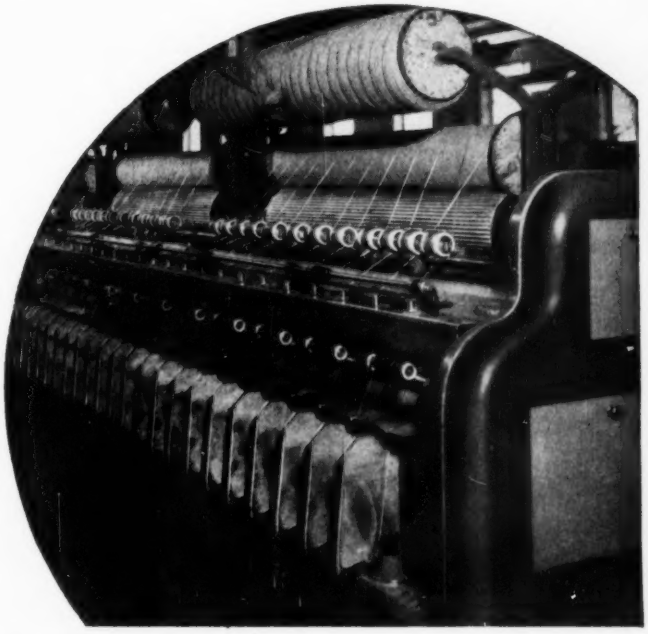
COMPLETE JOB BY CITIES SERVICE LUBRICANTS ... Glade 3-Z keeps leather on rolls soft and pliable. Amplex 5-P is used for oiling line shafting, Pacemaker #2 on spindle bearings, Optimus #6 in steam cylinders, Pacemaker #5 in steam engine crankcase.

CITIES SERVICE LUBRICANTS *keep 'em rolling at* CAPITOL CITY WOOLEN MILLS!

Capitol City Woolen Mills, Des Moines, Iowa, is typical of the many fast-moving, successful operations that have found Cities Service the perfect source for industrial lubricants.

They called in a Cities Service Lubrication Engineer on a specific problem ... and they followed his advice, using the Cities Service Lubricant he recommended. As usual, the results were effective: THE CITIES SERVICE LUBRICANT DID THE JOB! ... did the job so well, that Capitol City Woolen Mills now relies on Cities Service Lubricants throughout its operation.

If you have a particularly tough problem, why not call in a Cities Service Lubrication Engineer. Try his product ... and then carefully check the results. You'll find, as did Capitol City Woolen Mills, that Cities Service recommendations make sense ... save dollars. Call your nearest Cities Service Representative, or write Cities Service Oil Co., Dept. D37, Sixty Wall Tower, New York City 5, New York.



 For more information, write direct or use Reader Service post card.

The Three Grand Divisions of the Knitting Industry proudly announce

THE KNITTING ARTS EXHIBITION OF 1953

Atlantic City Auditorium, Atlantic City N. J.

April 27 through May 1

National Association of Hosiery Manufacturers
National Knitted Outwear Association
Underwear Institute

At this great Exhibition more than two hundred leading manufacturers will present the latest and the best in knitting machinery, equipment, supplies and services.

Every key executive in every branch of the industry will find at the Exhibition, something of special and particular interest. Thousands will attend.

Atlantic City offers a wide range of excellent hotel accommodations, but early reservations are imperative.

Plan now to attend the Knitting Industry's Greatest Exhibition.

Tickets may be secured free from exhibitors or from the Management of the Knitting Arts Exhibition.

For further information, write

ALBERT C. RAU, *MANAGER* **332 Park Square Bldg.** **Boston, Mass.**

TEXTILE WORLD'S

Guide to Exhibitors

Forty-first

KNITTING ARTS EXHIBITION

Sponsored by:

National Association of Hosiery Manufacturers

Underwear Institute, Inc.

National Knitted Outerwear Association

April 27 thru May 1, 1953

Atlantic City Auditorium • Atlantic City, N. J.

Let's talk AT THE SHOW

You've read about it, you've heard about it, but nothing is as effective and convincing as seeing a Turbo AD-48 in operation. Now you can see the Turbo AD-48 at the 1953 Knitting Arts Show in Atlantic City.

You'll find that the Turbo AD-48 is really two machines in one — it preboards with steam, boards with heated air. It has a production rate of 120 to 130 dozen pairs of static-free stockings per 8-hour day . . . with *one* operator. You'll see precision engineering at its finest, with automatic timing and controls to assure you of perfectly finished stockings.

You'll ask questions without having to raise your voice, for the AD-48 is quiet. There is no banging or jolting. You'll see why it's "gentle as a lamb", how fine stockings are treated with the care they deserve. You'll see the high production of beautifully finished stockings.

There will be other "stars" in the Turbo Show too, besides the AD-48. So . . . stop in and see them — and us — find out why Turbo gives you more "firsts", fewer "seconds".

If you can't come to the Show, the Turbo story can easily come to you. Write for complete information on Turbo Machines for Preboarding and Boarding.

TURBO MACHINE COMPANY
Lansdale, Pennsylvania, U.S.A.
Southern Rep.: F. W. Warrington Co., Charlotte, N. C.

41st KNITTING ARTS EXPOSITION

THE 41ST KNITTING ARTS EXHIBITION being held in Atlantic City Auditorium, Atlantic City, N. J., Monday through Friday, April 27-May 1, will be sponsored jointly by the National Association of Hosiery Manufacturers, the Underwear Institute, Inc., and the National Knitted Outerwear Association.

In previous years the Knitting Arts Exhibition and the Knitting and Allied Crafts Exposition have been held separately during alternate years. The merger of the two shows this year brings to the show visitor a complete display of machinery, materials, supplies, and services for all phases of the knitting industry.

The Knitting Arts Exhibition was first held in 1906. It was held annually in Philadelphia until 1941, when it was discontinued during the war years. In 1947 the exhibition was resumed on a biennial basis. The Knitting and Allied Crafts Exposition was held in 1950 and in 1952 in New York.

The visitor to the Atlantic City show will find increased value in a larger and more instructive exhibition that is sponsored by the three branches of the knitting industry. The biennial exhibition will give the exhibitors more time to prepare the presentation of their new developments. It will also enable the associations and the exhibitors to plan a more efficient and economical operation of the single show.

Plans for the 1954 trade exposition originally scheduled by the underwear and outerwear groups have been cancelled. The next scheduled show for the knitting trade, to be known as the Knitting Arts Exhibition, will be held in 1955.

▶ **TEXTILE WORLD is delighted to again have the opportunity of presenting this section as a Guide to Exhibitors. We hope you will find it useful during your visit to the show and as a handy reference for reviewing the exhibits after the show.**

We extend a cordial invitation to you to visit us at our booth (Nos. 85, 92). On your visit to the TEXTILE WORLD booth, pick up a copy of our Guide to the Show and one of our handy literature folders.

TEXTILE WORLD representatives at the booth during the week will include Edwin D. Fowle, publisher; P. M. Thomas, editor-in-chief; William Buxman, manager; and James H. Kennedy, Richard C. Scott, George M. Moisson, James H. Blore, Richard B. Pressley, Thomas B. Winston, William B. Dall, John C. White, Jr., Arch W. Fisher, H. C. Harvey, and Ralph Chisholm.

VISITING HOURS AT THE SHOW

Monday	3 p.m. to 8 p.m.
Tuesday	Noon to 10 p.m.
Wednesday	10 a.m. to 6 p.m.
Thursday	10 a.m. to 6 p.m.
Friday	10 a.m. to 1 p.m.

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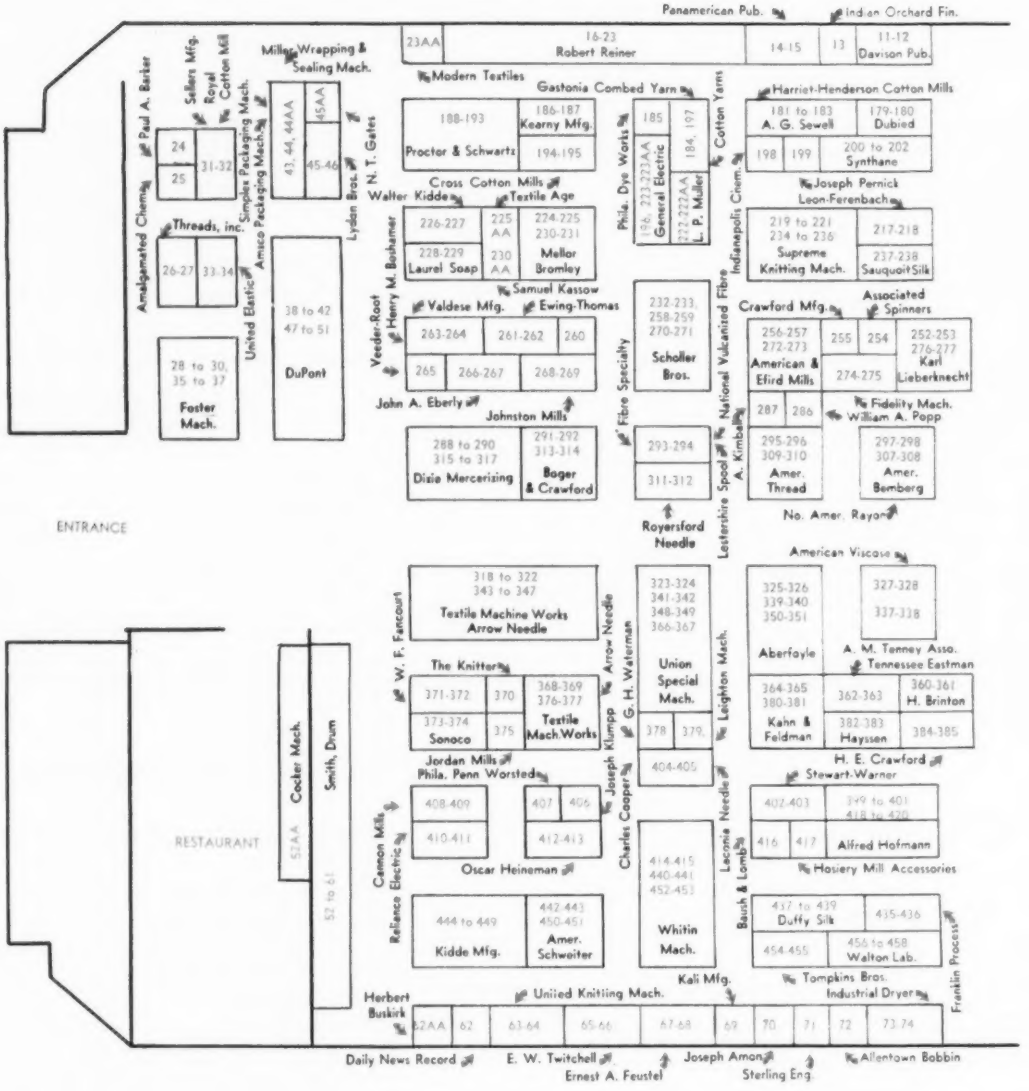
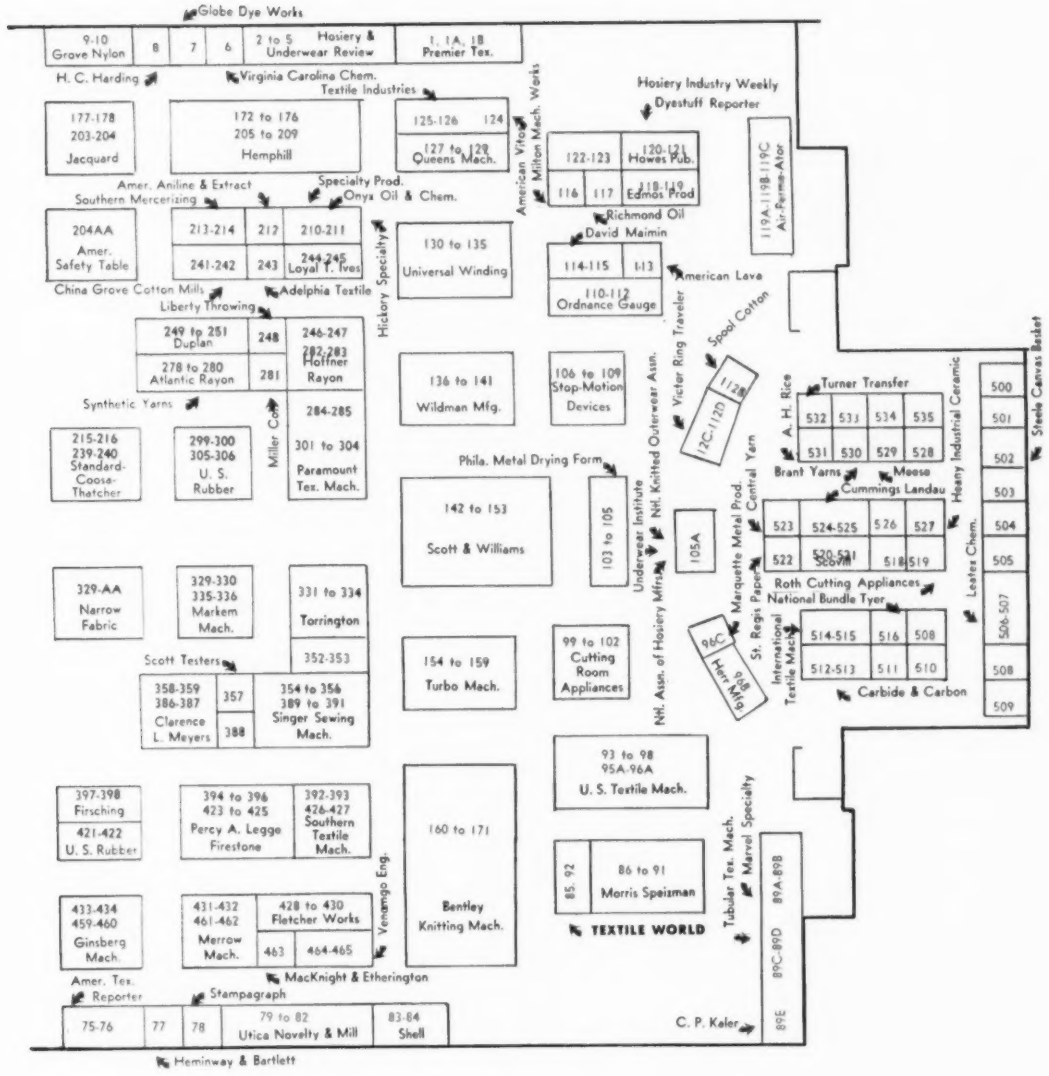


EXHIBIT AREA • Forty-first

Atlantic City Auditorium



KNITTING ARTS EXHIBITION

Atlantic City, N. J.

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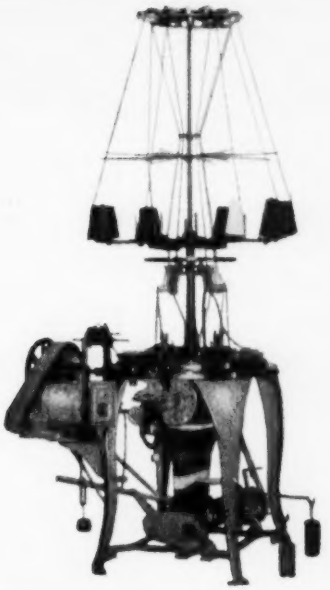
Leighton



LEIGHTON CIRCULAR KNITTING MACHINES

- The most versatile machine made for seamless sweater fabrics. Especially adapted for sportswear.
- Leighton features small sizes for infants and children that are seamless. No cutting. No sewing.
- Leighton machines are custom built with multiple feeds, two speed control, two and three color stripes, and attachment for brushing fabrics as they are knit.

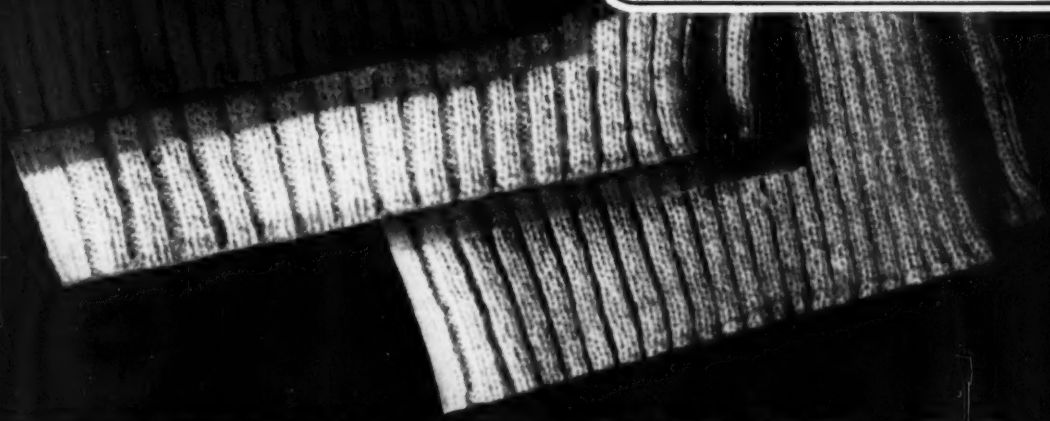
We invite you to visit the

LEIGHTON BOOTH No. 379

Knitting Arts Exhibition

April 27 to May 1

ATLANTIC CITY, N. J.



LEIGHTON MACHINE CO.

MANCHESTER, N. H.

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ALPHABETICAL LISTING OF EXHIBITORS

ABERFOYLE MFG. CO. (325-326, 339-340, 350-351)
123 S. Broad St., Philadelphia 9, Pa.

Features fabrics and garments knit from Durene, Weartwist, spun nylon, spun Orlon, spun Dacron, Nyfoyle, "Fifty-Four" (Orlon and cotton), and "Sixty-Three" (Dacron and cotton).

Representatives at booth:
J. S. Kenrick — W. Galey
W. T. Cheatham — J. P. Holt
W. G. Vetterlein — E. J. Neal
J. F. McCrudden — J. A. Holt
H. M. Detwiler — F. G. Miller
Miss M. B. Reid — J. J. Neil
E. O. Jennings — W. Brown
W. H. Crenshaw — D. W. Gott
W. A. Kennedy — S. P. Ruff
H. B. Bradley — S. H. Derry
A. Huston, Jr. — R. F. Morris

ADELPHIA TEXTILE CO. (243)
1815 W. Bristol St., Philadelphia, Pa.

Features nylon, silk, rayon, acetate, and mercerized cotton yarns.

Representatives at booth:
E. B. Steinmetz
C. Evans
E. C. Steinmetz
H. G. Sauerhoff
Mrs. E. B. Black

AIR-PERME-ATOR MFG. CO. (119A-119B-119C)
300 Preakness Ave., Paterson, N. J.

Features dry humidification. A unit that has a new patented evaporative structure will be on display.

Representatives at booth:
E. Kohut — P. M. Heuzey
R. G. Burr — T. E. Lucas

AMALGAMATED CHEMICAL CORP. (25)
Ontario & Rorer Sts., Philadelphia 34, Pa.

Features textile-chemical specialities, including dyeing agents, finishing agents, and hosiery finishes. A special group of plasticized resin emulsions will be shown.

Representatives at booth:
H. B. Dohner — G. C. Harkins
R. A. Bruce — C. E. Seel
R. N. Pennie — J. C. Crane
J. M. Jester, Jr

ALLENTOWN BOBBIN WORKS, INC. (72)
417-431 N. 14th Street, Allentown, Pa.

Features bobbins and spools for the throwing of fine-denier yarns.

Representatives at booth:
H. W. Mack — H. S. Barnes

AMERICAN ANILINE & EXTRACT CO., INC. (212)
Venango & F Sts., Philadelphia 34, Pa.

Features a film-forming antistatic agent for synthetic yarns and cellulose fibers, a film-forming resin for Dacron, and a polyvinyl size for nylon wet-processed yarns.

Representatives at booth:
W. J. Duddy — R. D. McCarty
M. H. Silberman — J. H. Jones
L. Kippex

AMERICAN BEMBERG CORP. (297-298, 307-308)
261 Fifth Ave., New York, N. Y.

Features various types of knitted fabrics made of Bemberg and Narco rayon yarns. Fabrics made in combination with other synthetic fibers will also be on display.

Representatives at booth:
J. C. Fortune — V. Bez
H. G. Spitzer — G. Monk
R. I. DeVine — J. B. Dunlop
J. C. Ashley

AMERICAN DYESTUFF REPORTER (120-121)
44 E. 23rd St., New York, N. Y.

Features a textile publication.

AMERICAN & EFIRD MILLS (256-257, 272-273)
Mt. Holly, N. C.

AMERICAN LAVA CORP. (113)
Cherokee Blvd., Chattanooga, Tenn.

Features AlSiMag ceramic thread guides.

Representatives at booth:
J. B. Shacklett — J. S. Gosnell
J. E. Spearman — G. E. Richter

AMERICAN SAFETY TABLE CO., INC. (204AA)
224 Fifth Ave., New York, N. Y.

Features a new insert top, new individual troughing, a conveyor press, individual stands and motors, a butt-seaming stand, and collar-turning and shaping machines.

Representatives at booth:
D. Frankel — H. Franke
J. C. Frankel — S. Wolff
B. Greenawalt

AMERICAN SCHWEITER CO. (442-443, 450-451)
22 Ashmont Ave., Whitinsville, Mass.

Features a new cross winder with a rotating yarn-guide device. A 12-spindle vario coner and a nine-spindle cross winder will also be shown.

Representatives at booth:
H. J. Theiler
H. Badertscher
J. Steinberg
H. Steinberg

AMERICAN THREAD CO. (295-296, 309-310)
260 Broadway, New York, N. Y.

Features a reception booth.

Representatives at booth:
C. L. Grebneaire — J. Buscher
H. Horrocks — R. Bliss
H. Pennewell — N. Blackledge
H. Greeson — E. Roller
W. McCulloch — E. Pretty
R. D. Howell, Jr.
J. W. Kennedy

AMERICAN VISCOSE CORP. (327-328, 337-338)
350 Fifth Ave., New York, N. Y.

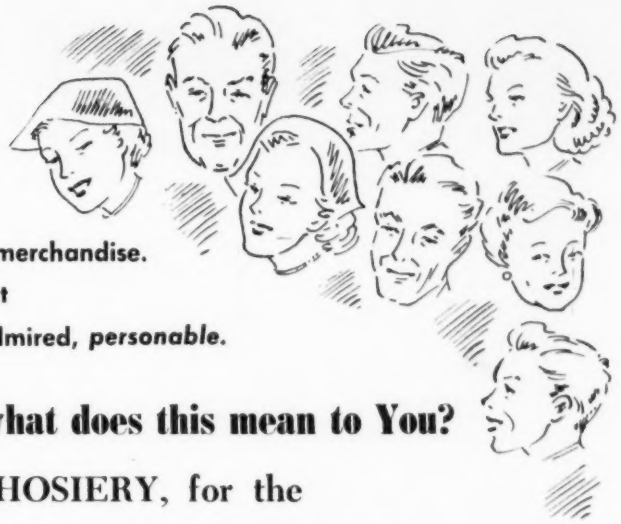
AMERICAN VITOS CO., INC. (124)
200 E. 42nd St., New York, N. Y.

Features hosiery-mending machines.

AMERICA'S TEXTILE REPORTER (75-76)
286 Congress Street, Boston, Mass.

Features a textile publication.

Who are these People?

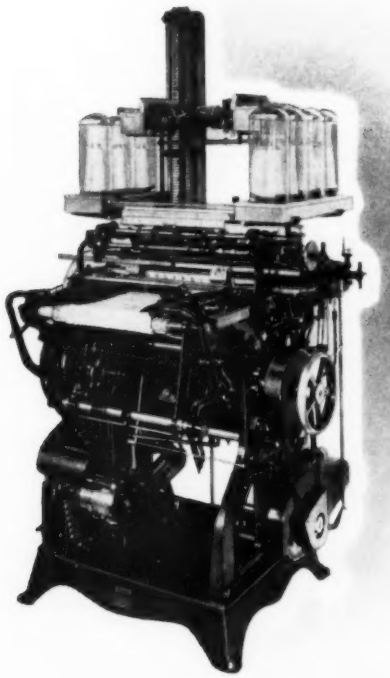


They are the ultimate consumers of your merchandise.
They have intimate, personal desires; they want
to be accepted, admired, *personable.*

SALES and PROFIT WISE, what does this mean to You?

The business of producing HOSIERY, for the great mass markets, as you well know, is constantly influenced by the fluctuating needs and wants of the people. To *sell* them you must satisfy them.

TO BE SPECIFIC . . . . . .



A sound starting point to make HOSIERY that will satisfy the needs of these people, is superior equipment — adaptable equipment, proven in operation. Wildman has this equipment and the facilities to satisfy the demands of your creative imagination, production requirements . . . As an instance, for the HOSIERY field, this Wildman High-Production, Full-Fashioned Hosiery Machine gives you high production of the finest gauge hosiery so much in demand today. Inquire today for complete information.

WILDMAN
Mfg. Co.
NORRISTOWN, PA.

Manufacturers of: Full Fashioned Hosiery Machines; Circular Machines for Outerwear, Underwear, Sportswear, Trimmings; Stop Motions

Guide to Exhibitors

(Continued)

JOSEPH AMON, INC. (70)
Rahway, N. J.

Features hosiery-mill equipment and accessories, including tension devices, tension rings, knitters' benches, work tables, plastic parts for pirns and cones, and porcelain eyelets and thread guides.

Representatives at booth:
A. Amon
H. Burdyeh
R. H. Therrell
W. Larmour
F. R. Cass

AMSCO PACKAGING MACHINERY, INC. (43, 44, 44AA)
31-31 48th Ave.,
Long Island City 1, N. Y.

Features bag-sealing machines, including a rotary bag-sealing machine to be used in conjunction with an Amsco conveyor for high-speed sealing of cellophane bags. A power-jaw sealing machine with an automatic labeling attachment and a rotary bag-sealing machine for the sealing of polyethylene bags will also be shown.

Representatives at booth:
J. D. Keenan
E. E. Messmer
J. D. Sylvester
J. D. Keenan, Jr.
G. C. Cignoli
G. A. Wiedersheim
F. P. Czifra
E. H. Watson
S. R. Watson
E. Primosch

ARROW NEEDLE CO. (318 to 322, 343 to 347, 368-369, 376-377)
Manchester, N. H.
See Textile Machine Works.

ASSOCIATED SPINNERS, INC. (254)
Gastonia, N. C.

Features samples of worsted and synthetic-fiber yarns, including nylon, Orlon, and Dacron. Among the new yarns to be shown will be a recently developed cashmere-type spun nylon.

Representatives at booth:
M. E. Tager
S. Tager
R. Tager

ATLANTIC RAYON CORP. (278 to 280)
86 Crary St., Providence 1, R. I.

Features dyed synthetic fibers and yarns.

PAUL A. BARKER, INC. (24)
1182 Broadway, New York 1, N. Y.

Features Bradford- wool-, and French-spun novelty yarns.

Representatives at booth:
P. A. Barker
A. E. Siegal
T. V. Dougherty
D. A. Novack
T. S. Molyneux

BAUSCH & LOMB OPTICAL CO. (416)
635 St. Paul St., Rochester, N. Y.

Features Ortho-Raters. A new modified Ortho-Rater will be on exhibit.

Representatives at booth:
R. H. Cook
R. F. Graham

BENTLEY KNITTING MACHINERY ORG., INC. (160 to 171)
31 Canal St., Providence 3, R. I.

Features fabrics made on the various Bentley Komet hosiery, glove, underwear, and outerwear machines.

Representatives at booth:
A. L. Hutton, Jr.
H. E. Katzenmoyer
E. L. Murphy, Jr.
A. H. Denerley
P. A. Brooks
H. Davis
W. Bentley
A. Handford
C. R. Batchelor
E. S. Barsby
E. Baines
H. H. Holmes
W. A. Kennedy
R. Hill
R. C. Honour

BOGER & CRAWFORD (291-292, 313-314)
K & E. Venango Sts.,
Philadelphia 34, Pa.

Features combed Peeler cotton yarns, combed Peeler mercerized yarns, fine spun nylon, and spun Orlon. Woven fabrics, knitted fabrics, and hosiery made from Boger & Crawford dyed yarns will also be on display.

Representatives at booth:
Mrs. F. Boger
E. T. Boger
R. C. Boger
A. H. J. Boger
I. B. Wattis
W. R. Carothers
W. C. Henderson
A. B. Rice
M. R. Copeland

HENRY M. BOSHAMER & CO., INC. (263-264)
2221 Chestnut St., Philadelphia, Pa.
See Valdese Mfg. Co.

BRANT YARNS, INC. (530)
1123 Broadway, New York, N. Y.

Features worsted, novelty, cotton, blended, and covered rubber yarns.

Representatives at booth:
I. Brant
M. Robbins
C. Sor

BRIAR PRODUCTS (388)
Box 282, Berwick, Pa.

H. BRINTON CO. (360-361)
Kensington Ave. and M St.,
Philadelphia 24, Pa.

Features a reception booth.

HERBERT BUSKIRK (62AA)
3333 Freemansburg Ave., Easton, Pa.

Features a miniature display of the company's trucking operation, together with photographs of trucking and rigging of full-fashioned hosiery-knitting machines.

Representatives at booth:
H. Buskirk
W. F. Volght, Jr.

CANNON MILLS, INC. (408-409)
70 Worth St., New York, N. Y.

Features cotton yarns.

Representatives at booth:
H. E. Aken
J. C. Williams
C. V. Albright
J. C. Bartlett
H. Crumbliss
F. A. Dusch
D. W. Jenkins
J. J. Meyer
J. F. Russell
J. W. Turner
T. R. Smith
W. F. Denning
D. A. Long, Jr.
H. Curlee
R. C. Rapp

CARBIDE & CARBON CHEMICALS CO. (512-513)
30 E. 42nd St., New York 17, N. Y.

Features dynel staple and apparel fabrics, including new blends for underwear, outerwear, and hosiery.

Representatives at booth:
A. L. Snyder
J. S. McGilly
C. A. Strodl
F. C. King
H. S. Porter

CENTRAL YARN & DYEING CO. (523)
Box 270, Gastonia, N. C.

Features package-dyed yarns, both cotton and synthetic, spun and filament, including many dyed blends. New colors on filament yarns in Centrofast and Centrosist colors will be shown.

Representatives at booth:
H. Girard
C. Girard
S. Girard
M. Rauch
H. Kamins

CHINA GROVE COTTON MILLS CO. (241-242)
China Grove, N. C.

COCKER MACHINE & FOUNDRY CO. (52AA)
P.O. Box 431, Gastonia, N. C.

Features an improved high-speed tricot warper with a magazine cone creel and a new adjustable-type tension.

Representatives at booth:
D. L. Friday
J. Cocker, III
J. C. Bodansky
P. E. Sherrill
F. H. Cunningham, Jr.

COMER-AVONDALE MILLS, INC. (122-123)
58 Worth St., New York, N. Y.

CHARLES COOPER CO., INC. (404-405)
Bennington, Vt.

Features knitting-machine needles.

Representatives at booth:
G. A. Parsons
R. Rogers

COTTON YARNS CO. (184, 197)
389 Fifth Ave., New York 16, N. Y.

Features yarns, including combed, mercerized, carded, cotton and acetate blends, dyed and bleached, all yarn numbers, for knitting and weaving, and sewing-thread yarns and finished units.

Representatives at booth:
H. A. James
R. J. Gurney
N. Zank
E. Strauss
A. Adelman

CRAWFORD MFG. CO., INC. (255)
P.O. Box 328, New Brunswick, N. J.

Features electric stop motions for all circular-knitting machines. A new-style needle protector, control boxes, hole detectors, and other attachments for circular-knitting machines will be on display.

Representatives at booth:
A. Crawford
G. Onderdonk
F. Doerr
M. Antonevich

H. E. CRAWFORD CO. (384-385)
824 S. Main St., Kernersville, N. C.

Features mill supplies.

CROSS COTTON MILLS CO. (194-195)
Box 529, Marion, N. C.

Features a reception booth.

Representatives at booth:
E. Cross, Jr.
O. R. Cross
S. Cohn
N. Jacobs
I. I. Davis

CUMMINGS LANDAU LAUNDRY MACHINERY CO., INC. (524-525)
305 Ten Eyck St., Brooklyn 6, N. Y.

Features a washing unit designed for use in the knitwear trade.

Representatives at booth:
E. Cummings
M. Landau
D. Green
F. Mass

CUTTING ROOM APPLIANCES CORP. (99 to 102)
45 W. 25th St., New York 10, N. Y.

Features electrically operated cloth-laying machines for tubular-knit fabrics and for tricot on the double fold, electric and hand-operated cloth-laying machines for woven materials, metal sectional cutting tables, and automatic thread trimmers.

Representatives at booth:
D. Grossberg
J. E. Fox
S. Hutkin
B. Nathanson
H. Bard

DAILY NEWS RECORD (62)
7 E. 12th Street, New York, N. Y.

Features a textile publication.

DAVISON PUBLISHING CO. (11-12)
Ridgewood, N. J.

Features a textile publication.

DIXIE MERCERIZING CO. (288 to 290, 315 to 317)
Chattanooga, Tenn.

Features a reception booth.

Representatives at booth:
J. B. Frierson
C. R. Ewing
B. P. Barnes
A. P. Cochran
A. K. Johnson
A. Dalglish
F. W. Frank
G. W. Veness
T. J. Tighe
E. R. Kimball
D. O. Blevins
R. L. Voigt
J. Lupton
P. D. Morrow
W. Evans
S. Cameron
J. B. Cameron
W. Eipper
G. M. Porges
W. W. Logan
M. H. Horchler
P. H. Dalglish
G. A. Dalglish

DUBIED MACHINERY CO. (179-180)
11-30 45th Road
Long Island City 1, N. Y.

Features a Wevenit A-24 circular jacquard machine and a DDD double-lock fully automatic flat machine.

Representatives at booth:
J. G. Sandri
E. Hafner
J. Gutknecht

DUFFY SILK CO. (437 to 439)
1270 Broadway, Buffalo 12, N. Y.

Representatives at booth:
C. G. Duffy, Jr.
P. Hemmerich
P. H. Hemmerich, Jr.
F. Overkamp
C. A. Lorenz, Jr.
C. W. Seidel
H. G. Kenna, Jr.

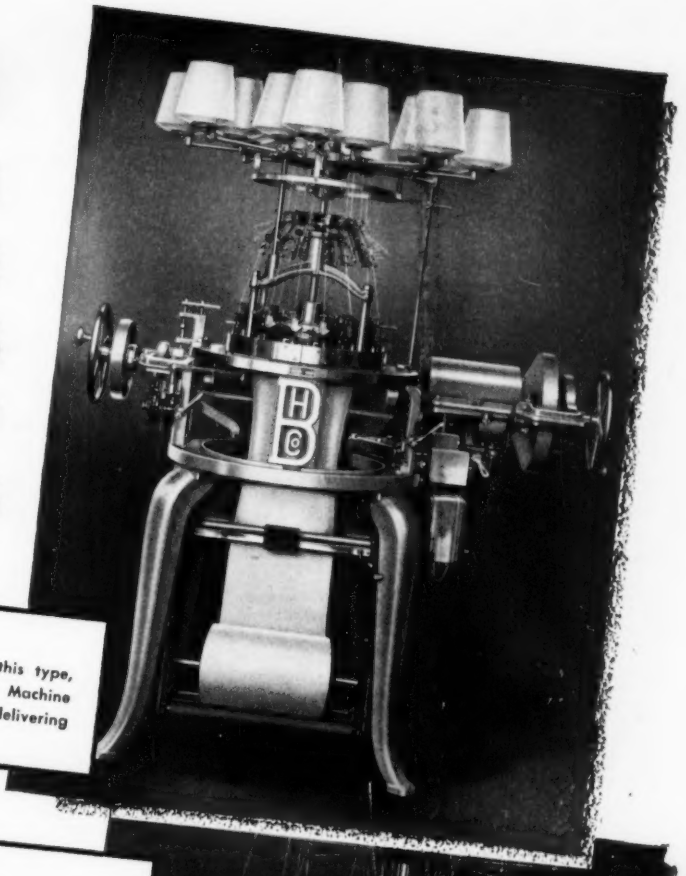
DUPLAN CORP. (249 to 251)
1407 Broadway, New York 18, N. Y.

Features yarn throwing. Dutex, a textured nylon yarn, and Helanca, a stretchable nylon yarn, will be on display.

Representatives at booth:
R. H. Griffith
N. F. Murphy
F. D. McKay, Jr.
F. J. Collins

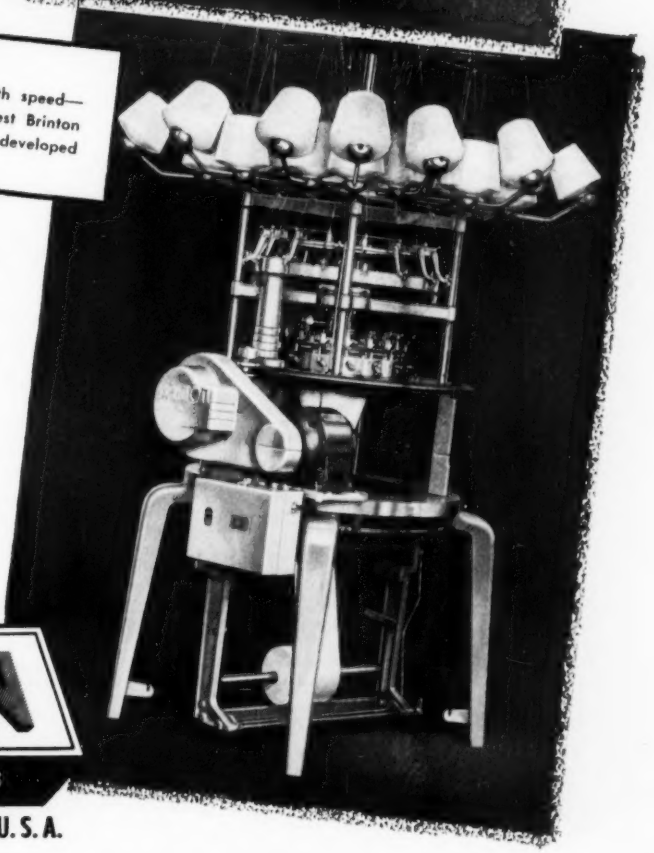
BRINTON

OFFERS YOU YOUR CHOICE OF TWO TYPES OF RIB BODY MACHINES



STATIONARY CYLINDER

Throughout the world knitting mills are using this type, such as the Brinton Maximum Feed Rib Body Machine shown above, because they find it unexcelled for delivering quality and quantity production.



REVOLVING CYLINDER

New features of engineering are combined with speed—plus—quality production in this type—the newest Brinton development. Years of Brinton research have developed these revolving cylinder machines.

WEIGH THE ADVANTAGES

Each type of machine has features of merit. Select the type best suited for *your* operation. The outstanding advantage of the machine, whichever type, is the Bonus Feature: *Brinton's 63 Years of Know-How*—seasoned engineering ability, expert mechanical knowledge, top-flight production experience and skilled craftsmanship—which assures you of the highest quality machine it is possible to manufacture.

BRINTON

CIRCULAR KNITTING MACHINES

KENSINGTON AVE. & M ST., PHILA. 24, PA., U. S. A.

Guide to Exhibitors

(Continued)

W. A. Wood, Jr.
W. S. Wheeler
J. M. Huling

E. I. DU PONT DE NEMOURS & CO., INC. (38 to 42, 47 to 51)

Wilmington, Del.

Features apparel and home furnishings that are made from acetate, viscose, Fiber E rayon, nylon, Orlon, and Dacron.

JOHN A. EBERLY, INC. (266-267)

Reading, Pa.

EDMOS PRODUCTS CORP. (118-119)

13 Christopher St., Brooklyn, N. Y.

Features fabrics produced on their machines.

Representatives at booth:
M. Moskowitz
A. Fried
A. Dreyer
M. Moskowitz

EWING-THOMAS CORP. (261-262)

Rose & Walnut Sts., Chester, Pa.

Features natural, bleached, and dyed mercerized yarns. Metro-shade yarns will also be shown.

Representatives at booth:
J. L. Rankin
J. W. Jester
G. W. Fiss, III
C. V. Albright
J. C. Bartlett
F. W. Crews
H. Crumbliss
F. A. Dusch, Jr.
J. T. Meschter
J. J. Meyer
J. F. Russell
D. Thomas, II
G. E. White

W. F. FANCOURT CO. (371-372)

516-518 S. Delaware Ave., Philadelphia 47, Pa.

Features various-denier nylon hosiery and synthetic knit and woven fabrics, all treated with new Fanco finishes. Resin finishes, scours, softeners, and waterproofing compounds for piece goods will be shown.

Representatives at booth:
W. F. Fancourt, Jr.
W. F. Fancourt, III
J. L. Fancourt
C. Wolff
T. Lindley

ERNEST A. FEUSTEL (67-68)

N. J. Hwy. 17, Lodi, N. J.

Features carriers and tubes.

Representatives at booth:
E. A. Feustel
R. Feustel
F. Feustel
W. Fricke

FIBRE SPECIALTY CO. (293-294)

Kennett Square, Pa.

Features Fiberglas trays, hard-vulcanized fiber trays, light-weight-fiber basket-type trucks, casters, roving cans, and receptacles.

Representatives at booth:
R. Woods
R. A. Craig
J. C. Berger
C. Hannum
R. G. Henderson
H. Ingram
L. Allen

FIDELITY MACHINE CO., INC. (274-275)

3908-18 Frankford Ave., Philadelphia 24, Pa.

Features the S-49 multidesign ribbers in collar and cuff sizes, a five-color yarn selector and knot tyers, and a skein reeler.

Representatives at booth:
R. D. Faigenbaum
R. C. Aycock
C. S. Brannock
G. Petrie
L. Katz
J. P. Vogt
R. Scholes
L. Hill
R. Harbeck
J. R. Bennett

FIRESTONE INDUSTRIAL PRODUCTS CO. (394 to 396, 423 to 425)

Akron, Ohio

See Percy A. Legge.

J. A. FIRSCHING & SON, INC. (397-398)

421-423 Broad Street, Utica 2, N. Y.

Features an automatic lay-up machine, a strip-cutting and rolling machine, and a new collarette cutter.

Representative at booth:
R. A. Firsching

FLETCHER WORKS, INC. (428 to 430)

Second St. & Glenwood Ave., Philadelphia 40, Pa.

Features a king-spool twister, a Speedex winder, a master duplex double-twister, and a junior extractor.

Representatives at booth:
W. H. Rometsch
C. W. Moore
T. B. Baldridge, Jr.
H. D. Cupitt
J. D. Harrison
W. W. Egee
H. V. Roessell

FOSTER MACHINE CO. (28 to 30, 35 to 37)

Westfield, Mass.

Features a machine that winds various yarns on tubes and cones, a new constant-speed take-up spindle for filament yarns, a precise-wind machine producing cones and tubes, a nylon-sizing machine, a 10-in.-traverse Precise Winder, and the Foster-Muschamp Autofill machine.

Representatives at booth:
W. C. Chisholm
E. C. Connor
H. W. Ball
H. E. Swift
J. B. Davenport
E. P. Dodge
G. W. Mallory
H. A. Cadle
E. F. Stange
E. R. Davis
H. L. Muschamp

FRANKLIN PROCESS CO. (435-436)

Howard & Clearfield Sts., Philadelphia, Pa.

Features stainless-steel-core compressible dye packages, knitting yarns, and fabrics.

Representatives at booth:
W. F. Wolfe
C. W. Dawson
M. E. Davis
B. S. Phetteplace
R. F. Strahley
H. N. Graves
S. W. Cable
R. B. Lusignea
C. E. McElwee
E. W. Windle
J. Garner

GASTONIA COMBED YARN CO. (184, 197)

Gastonia, N. C.

See Cotton Yarns Co.

N. T. GATES CO. (45AA)

Drexel Bldg., Philadelphia, Pa.

Features packings for the pre-packaging of hosiery, underwear, and other textiles for self-service merchandising. Special and stock-design hosiery tissues for full-fashioned hosiery, lithographed box wraps, and stock-design and special-design Cellophane envelopes will also be displayed.

Representatives at booth:
N. T. Gates
W. F. Baker
R. A. Cyliax
W. W. Russell
R. C. Aycock

GENERAL ELECTRIC CO. (196, 223-223AA)

1 River Road, Schenectady, N. Y.

Features motors, controls, drives, and specialties for the knitting industry. A magnetic yarn-tension brake, a new 7½-hp. Thymotrol drive for Reading hosiery machines, and a newly designed screenless open textile motor will also be on display.

Representatives at booth:
J. W. Holt
G. W. Knapp
A. W. Eaton

GINSBERG MACHINE CO., INC. (433-434, 459-460)

224 Fifth Ave., New York 1, N. Y.

Features individual Trim-Master thread trimmers for men's half hose, argyles, and seamless and rubber-top hosiery. Conveyor packing tables will also be on exhibit. Waltee's miniature calender attachment to laying-up machines, the Loktag attachment to the U. S. 39200 to eliminate bartacking, and the Rotax automatic bias-binding cutter will also be on display.

Representatives at booth:
S. Margolis
W. R. Lieberman
H. Stout
P. Harris

GLOBE DYE WORKS CO. (7)

4500 Worth St., Philadelphia 24, Pa.

Features dyed yarns.

Representatives at booth:
H. T. Greenwood
T. S. Greenwood
W. B. Taylor
W. A. Hilbert
W. Goddis

GROVE NYLON CO. (9-10)

150 Grove St., Scranton 10, Pa.

Features Grove-Dul, a 15-den. monofilament yarn that is permanently dull; and Grove Hi-Dye, a filament yarn that can be used in any part of a stocking to give a controlled depth of shade.

Representatives at booth:
W. L. Schautz
A. G. Schautz
W. T. Cheatham
H. C. James
W. C. Napier, Jr.
D. M. Harshman
R. W. Yeabsley
R. F. Yeabsley
Dr. R. F. Stuewer
J. Kalinowski

H. C. HARDING, INC. (8)

2nd & Tilghman Sts., Philadelphia 22, Pa.

Features specialty knitting oils for all types of machines, trough solutions, 15-den.-yarn lubricants, solvents and penetrants, and machine cleaners.

Representatives at booth:
G. J. Reihl
W. J. Dougherty

HARRIET-HENDERSON COTTON MILLS (181 to 183)

Henderson, N. C.

Features a reception booth.

Representatives at booth:
M. Y. Cooper
A. Dalglish
D. O. Blevins
W. Brown
W. Cheatham
H. James
P. Dalglish
D. F. Swain
P. Sweetser
A. G. Sewell
J. L. McInnis
T. H. Crudup, Jr.

HAYSSEN MFG. CO. (382-383)

13th & St. Clair Ave., Sheboygan, Wis.

Features the new C-U-F textile-wrapping machine.

Representatives at booth:
J. O. Willis
R. P. Wilson
W. A. Hayssen
J. C. Johnston
W. Wartke
H. E. McAvoy

HEANY INDUSTRIAL CERAMIC CORP. (527)

915 Whitney Ave., New Haven, Conn.

Features textile guides made of Heanium. A recently developed pigtail guide made of metal with a Heanium insert will also be shown.

Representatives at booth:
A. O. Pieper
A. C. Pieper
H. Boveri

OSCAR HEINEMAN CORP., DIV. (412-413)

2701 W. Armitage Ave., Chicago 47, Ill.

Features thrown yarns.

Representatives at booth:
D. G. Brewster
J. C. LaVey
R. E. Nelson
C. T. Brereton
D. W. Gott
F. Lunday

HEMINWAY & BARTLETT MFG. CO. (77)

500 Fifth Ave., New York, N. Y.

Features nylon, Orlon and Dacron sewing threads; nylon separating thread; nylon and Orlon Filaspun. Hembobs (no-core, no-shell bobbins) will also be shown.

Representatives at booth:
E. Vogel
M. Cohen
H. Spray
D. Houk

HEMPHILL CO. (172 to 176, 205 to 209)

Pawtucket, R. I.

Features products made on the Banner automatic hosiery machines.

Representatives at booth:
B. R. Ebersman
J. McDowell
R. Sachar
E. StPierre
J. Hobson
J. Canavan
R. Lamontagne
T. Toole
P. Howard
R. Greene
E. Brown
N. D. Langlois

HERR MFG. CO., INC. (96B)

318-320 Franklin St., Buffalo 2, N. Y.

Features recently developed lightweight flyers. Conical rings and holders will also be featured in the display.

Representatives at booth:
H. B. Atwood
W. W. Woodard

HICKORY SPECIALTY CO., INC. (388)

190 Warren St., Jersey City 2, N. J.

See Specialty Products Co.

HOFFNER RAYON CO. (246-247, 282-283)

Belgrade & Ontario Sts., Philadelphia 34, Pa.

Features dyed decorative yarns for hosiery. Skein- and package-dyed nylon, rayon, acetate, and other man-made fibers will also be shown.

Representatives at booth:
J. C. Hoffner
J. G. Hoffner
J. M. Hoffner
C. P. Hoffner
J. C. English
D. F. Swain
F. M. Shannonhouse

Supreme-line

your mill for greater knitting profit

Supreme's prime objective is building machines that will knit profits for their owners. You'll find the evidence in Supreme-equipped mills all over the world.

Supreme's engineering research is devoted to developing equipment which incorporates the latest advances in modern scientific knitting. This design progress continues to provide knitters with outstanding production rates . . . multi-machine versatility . . . new fabric possibilities. Yet, every Supreme model contains basic mill-proven construction features that make the Supreme-line a family of hard-working, long-lasting, low-maintenance money makers.

Model LRP
"Vent-Knits" striking new summerwear and under-
wear fabrics — Up to 28 Yds. per Hr.
Model SR
Knits plain or swiss rib —
Up to 56 Yds. per Hr.
Model LT/SAAF
Knits regular (ML) and long-looped (LT).
4-color striped terry. Convertible to (SA/AF) jersey.
Model SA/AF
Knits wide variety of variable stripes and patterns
— Up to 40.5 Yds. per Hr.
Model ROF
Knits jacquard - type floatless patterns
—Up to 45 Yds. per Hr.
Model IC
Knits fleece coatings —
Up to 30 Yds. per Hr.
Model MJ
Knits wide diameter and body-size jersey
—Up to 125 Yds. per Hr.
Model ML
Knits pile, loop terry and plush
—Up to 35 Yds. per Hr.

Visit Supreme At The Knitting Show

For complete information on Supreme's latest developments in profit-knitting, be sure to stop in at SUPREME BOOTHS 219, 220, 221, 234, 235, 236 during the KNITTING ARTS EXHIBITION, ATLANTIC CITY APRIL 27 THROUGH MAY 1st.

Ask for complete, free information on any of the Supremes shown here.

SUPREME
KNITTING MACHINE CO., INC.
107 JOHNSON AVE., BROOKLYN 6, N. Y.
Southern Representative and Showroom:
The Malluck Co., 711 S. Tryon St., Charlotte, N. C.

SK-158

Guide to Exhibitors

(Continued)

ALFRED HOFMANN & CO. (399 to 401, 418 to 420)
629-635 59th St., West New York, N. J.
Features a newly designed high-speed Mayer tricot machine, a Simplex Mayer machine, a newly developed circular Internit Mayer machine, and an exhibition of Groz-Beckert needles.

HOSIERY INDUSTRY WEEKLY (120-121)
44 E. 23rd St., New York, N. Y.
Features a textile publication.

HOSIERY MILL ACCESSORIES, INC. (417)
Northampton, Mass.
Features knitting-mill accessories and supplies.

HOSIERY & UNDERWEAR REVIEW (2 to 5)
1 W. 34th Street, New York, N. Y.
Features a textile publication.

HOWES PUBLISHING CO., INC. (120-121)
44 E. 23rd Street, New York, N. Y.
Features a textile publication.

INDIANAPOLIS CHEMICAL CO., INC. (198)
528 N. Fulton St., Indianapolis, Ind.
Features nylon-cleaning and trough solutions.

INDIAN ORCHARD FINISHING CO. (13)
Indian Orchard, Mass.
Features a display of textile finishes as applied to cotton, wool, blended fabrics, and Orlon.
Representatives at booth:
L. Wess
C. Brennan

INDUSTRIAL DRYER CORP. (73-74)
432 Fairfield Ave., Stamford, Conn.
Features an H-W conditioner for hosiery and twist setting and a recently developed Type 40 H-W conditioner for small hosiery mills.
Representatives at booth:
P. H. Friend
J. R. Tutt
W. H. Truesdale, II
F. W. Caesar

INTERNATIONAL TEXTILE MACHINE CO. (514-515)
413 Professional Bldg., Charlotte, N. C.
Features hosiery-mill accessories. A pneumatic hosiery-turning machine will be on display.
Representatives at booth:
J. W. Glaze, Jr.
F. Rufty
O. T. Waggner
J. Kienel

THE LOYAL T. IVES CO., INC. (244-245)
19 Water St., New Brunswick, N. J.
Features a line of various types and gauges of spring-beard needles, sinkers, jacks, and other special parts used in knitting machines.
Representatives at booth:
T. Whitlock
T. Whitlock, Jr.
C. S. Lydecker
R. Bergen

JACQUARD KNITTING MACHINE CO., INC. (177-178, 203-204)
G & Lycoming Sts., Philadelphia 24, Pa.
Features sweaters, bathing suits, polo shirts, knitted dresses, and other types of outerwear made on the company's machines.
Representatives at booth.
C. Miller
J. Titti
H. Steinberg
F. Beeton
J. Forstadt
R. C. Dott
J. Eckhart
W. Cohen

JOHNSTON MILLS CO. (268-269)
Box 720, Charlotte 1, N. C.
Features natural and dyed carded, combed, and Durene yarns.
Representatives at booth:
D. R. Johnston
D. R. Jonas
R. M. Bechtel
F. N. Belk
W. J. Crummer
J. W. Ferguson
E. E. Jones, Jr.
W. B. Phelps, Jr.
W. J. Yates

JORDAN MILLS, INC. (375)
Columbus, Ga.
Features cotton and yarns.
Representative at booth:
R. Curtis Jordan, Jr.

KAHN & FELDMAN, INC. (364-365, 380-381)
200 Madison Ave., New York 16, N. Y.
Features thrown yarns.
Representatives at booth:
G. N. Frank
J. B. Cameron
W. A. Elpper, Jr.
P. H. Dalglish
H. Kurtz
C. R. Ibach, Jr.
D. F. Swain
P. Wilson
D. O. Blevins

C. P. KALER CO. (89E)
100 E. Seventh St., Lansdale, Pa.
Features dye nets made from 100% spun viscose, one-half cotton and one-half rayon, all-cotton, and muslin. Nonplus patented knitted warps for hosiery will also be shown.
Representatives at booth:
C. P. Kaler
P. Kaler
R. Schneck

KALI MFG. CO. (69)
427 Moyer St., Philadelphia 25, Pa.
Features softeners, dyeing assistants, and cleaning agents.
Representatives at booth:
S. G. Davenport
J. A. Branegan
M. W. Mueller
R. J. Schadewald
J. Gilroy

SAMUEL KASSOW CO. (230AA)
121 N. Broad St., Philadelphia, Pa.
Features thrown yarns.
Representatives at booth:
S. Kassow
J. Kassow

KEARNY MFG. CO., INC. (186-187)
681 Schuyler Ave., Kearny, N. J.
Features Surco-ST yarn-conditioning equipment as installed on commercial winders. Moisture-reading textile psychrometers will also be shown.
Representatives at booth:
H. E. Kresse
E. W. Ercklentz
P. J. Sturzenegger
Kops Associates (representatives)

WALTER KIDDE & CO., INC. (226-227)
675 Main St., Belleville, N. J.
Features a standard compensator, a double-disk compensator, and a warp compensator. A new stop motion for the warp compensator will be shown.
Representatives at booth:
E. H. Muller
E. L. Herbert
J. Warwick
J. O'Blenis
R. H. Breen
D. M. Kroll

KIDDE MFG. CO., INC. (444 to 449)
35 Farrand St., Bloomfield, N. J.
Features an improved Kidde knitter and a raschel-type warp-knitting machine.
Representatives at booth:
W. J. Behr
J. H. Fleming
K. Kaak
C. E. Glover
R. Giordano

A. KIMBALL CO. (287)
307 W. Broadway, New York 13, N. Y.
Features label-marking systems, including a motor Kimco for string tags and folding pin tickets, a label marker for cloth and paper sew-in labels, the Model R for pin tickets, and a midget marking system for Kum Kleen labels, gum labels, Kimflex and pin tickets.
Representatives at booth:
L. J. Waters
J. C. Quinn
J. P. McGuire
T. R. Spencer
F. Brady
T. Odom

JOSEPH KLUMPP CO. (406)
1617 Pennsylvania Blvd., Philadelphia 3, Pa.
Features a display of carded and combed cotton yarns, Durene, and combination and specialty yarns.
Representatives at booth:
J. J. Klumpp
G. L. Vonder Lindt
W. Gill, Jr.
E. J. Keenan, Jr.
C. H. W. Mandeville
W. H. Cronin, Jr.
B. C. Carroll
J. M. McGinnes
W. J. Kane

THE KNITTER (370)
218 W. Morehead Street, Charlotte, N. C.
Features a textile publication.

LACONIA NEEDLE CO., INC. (404-405)
117 Union Ave., Laconia, N. H.
Features latch needles.
Representatives at booth:
G. A. Parsons
C. O. Hodges
B. Lauderbach
G. Dawson
R. Rogers

LAUREL SOAP MFG. CO. (114-115)
2618 E. Tioga St., Philadelphia 34, Pa.
Features soaps, oils, and finishes for the knitting trade.
Representatives at booth:
C. E. Bertolet
W. H. Bertolet, Jr.
A. H. Gaede
F. Jackson
W. H. Bertolet, III
T. C. Holst
A. H. Rant

LEATEX CHEMICAL CO. (506-507)
2722 N. Hancock St., Philadelphia, Pa.
Representatives at booth:
J. F. Riedler
L. K. McChesney
M. Guertin
W. J. Brink
H. Buckley
J. McChesney, Jr.
J. A. Clark
C. L. Hammell
H. Higgenbotham
J. McChesney, Sr.

PERCY A. LEGGE (394 to 396, 423 to 425)
432 Fourth Ave., New York 16, N. Y.
Features woolen and worsted yarns as well as blends and specialty fibers spun on the woolen and worsted systems. Elastic Contro yarns for all types of knitting will also be on display.
Representatives at booth:
C. H. Vanderbeck
H. C. Legge
A. E. Snyder
A. R. James
O. L. McCurdy
C. W. Neeld, Jr.
L. Clelland
T. W. Adams
A. W. Metcalfe
R. C. Condon
W. Smith
R. S. Rosenfeld
F. K. Johnston, Jr.
G. Lawrence Wagoner
M. M. Dursin
M. G. Dursin
E. S. Cobb
G. W. Aspinwall
L. L. Sylvestre
J. W. Tuttle
C. B. Rockwell
V. J. Cockroft
R. J. Mitchell
H. A. Stawniak
T. J. Gracia
A. Williams
F. L. Armitage

LEIGHTON MACHINE CO. (379)
Manchester, N. H.
Features sample knit goods.
Representatives at booth:
A. B. Gould
F. C. Golden
J. C. Rice

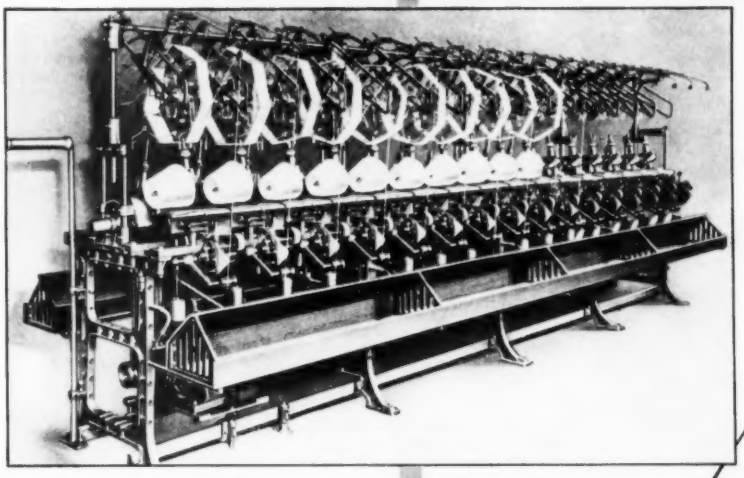
LEON-FERENBACH, INC. (217-218)
40 W. 40th St., New York 18, N. Y.
Features samples of recently developed yarns and throwing developments.
Representatives at booth:
C. Ferenbach
W. W. Patten
C. W. Wolcott
R. W. Boyd
R. S. Ferenbach
G. Ferenbach
J. C. Ferenbach
T. B. Craver
A. N. Tingley

LESTERSHIRE SPOOL & MFG. CO. (293-294)
Johnson City, N. Y.
Features spools, bobbins, reel caps, and shipping packages for use with all types of yarns.
Representatives at booth:
J. H. Windle
C. E. Lathrop
W. H. Hobbs

LIBERTY THROWING CO., INC. (248)
Kingston, Pa.
Features for hosiery manufacturers—nylon leg yarns, welt yarns for special effects, and dyed-yarn packages in various colors; for tricot knitters—crepe yarns, dyed yarns, novelty yarns, and fabrics made from these yarns; for circular knitters—plied rayons and fabrics made from these yarns.
Representatives at booth:
C. M. Epstein, Jr.
G. M. Poillon
J. D. Sicher

How to wind BETTER CONES at LOWER COST

The Schweiter KM Skein-to-Cone Winder

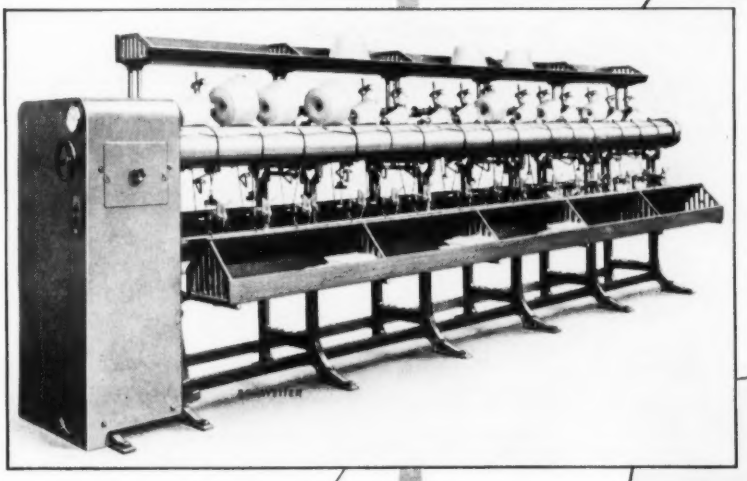


- Winds directly from skeins to cones
- No backwinding necessary
- Uniform wax application
- Eliminates knots and waste
- Better cones at lower cost
- Silent operation

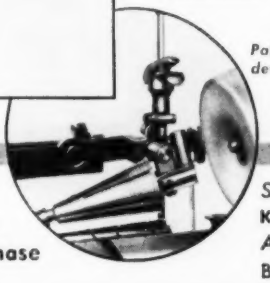
The winder consists of a variable number of units, each individually driven, each winding and waxing in the same operation from either skeins or bobbins.

"A Knotless Yarn is a Premium Yarn."

The Schweiter HKD High-Speed Cone Winder



- Special waxing device for backwinding
- Winding speeds up to 850 yards per minute
- Adjustable diameter for uniform cone size
- Rotating yarn guide device
- Low maintenance cost
- Quiet, efficient operation
- Many other exclusive patented features



Patented cone carrier with locking device and hinged cone holder.

ECONOMICAL
to operate • to purchase

See them in operation at the
KNITTING ARTS EXHIBITION
Atlantic City—April 27-May 1
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Guide to Exhibitors

(Continued)

KARL LIEBERKNECHT, INC. (252-253, 276-277)
Box 717, Reading, Pa.
Features a moving picture of the company's 32-section machine in operation. Hosiery samples will also be on display.

LYDON BROS., INC. (45-46)
85 Zabriskie St., Hackensack, N. J.
Features a truck-loading hosiery presetter with a combination of electric and steam heat.

MacKNIGHT & ETHERINGTON BROS. (463)
1518 Walnut St., Philadelphia, Pa.
Features a reception booth.
Representatives at booth:
B. H. Etherington, Jr.
F. H. Etherington
R. T. Davis, Jr.
J. C. Crawford

DAVID MAIMIN & CO. (114-115)
633 Arch Street, Philadelphia 6, Pa.
Features general sewing-factory equipment and supplies for sewing rooms, cutting rooms, and stock and shipping rooms. Included in the exhibit will be a portable steam pocket creaser, an electric cloth notcher, an automatic electric steam boiler, a lace-spreading machine, and Duron sectional cutting tables.
Representatives at booth:
A. M. Maimin
E. Kelly

MARKEM MACHINE CO. (329-330, 335-336)
150 Congress St., Keene, N. H.
Features industrial marking machines and a pressure-sensitive tape printer.
Representatives at booth:
H. D. Milton
R. C. Mensel
C. H. Cheeseman
H. E. Clark
E. R. Lane
G. Fretz

MARQUETTE METAL PRODUCTS CO. (96C)
1145 Galewood Drive, Cleveland 10, Ohio
Features roller-bearing spindles.
Representatives at booth:
C. E. Miller
C. H. White
J. J. Hallissy

MARVEL SPECIALTY CO. (89A-89B)
P.O. Box 125, Paducah, Ky.
Features the Marvel mending machine. A new attachment that features a newly developed method for the heat treatment of work after finished mending will also be on display.
Representatives at booth:
G. Harralson
J. Haines, Jr.
R. L. Austin, Jr.
G. T. Smith

MEESE, INC. (529)
1936 Harris Ave., Madison, Ind.
Features canvas trucks, baskets, and hampers.

MELLOR BROMLEY GROUP, INC. (224-225, 230-231)
432 Fourth Ave., New York 16, N. Y.
Features for the first time the Twin Rapid Knitwear Press that is used for finishing sweaters as well as other types of finished knitwear. Samples from interlock machines, multifeed rib machines, jacquard machines, and transfer-stitch machines will be shown.
Representatives at booth:
G. R. Ford
A. Shortland
C. Bode
I. Haldane

MERROW MACHINE CO. (431-432, 461-462)
28 Laurel St., Hartford, Conn.
Features overseaming, overedging, crochet, and shell-stitch machines. A new machine producing plain crochet and a three-stitch shell and a new intermittent-shirring machine will also be on display.
Representatives at booth:
J. M. Washburn
W. M. Baker
H. F. Stolzenberg

CLARENCE L. MEYERS & CO. (358-359, 386-387)
2nd & Somerset Sts., Philadelphia 33, Pa.
Features Ducle yarn, Durene, cotton yarns, and combination yarns of cotton and nylon, Orlon, and other synthetic fibers.
Representatives at booth:
M. M. Meyers
J. A. Meyers
G. E. Meyers
E. N. Myers
F. W. Fowler
L. Eschelbach
H. W. Schrader
C. E. Bender
R. Gant
F. W. Johnston
D. J. Strauss

THE MILLER CO. (281)
99 Center St., Meriden, Conn.
Features lighting equipment, including a new all-white fluorescent-lighting line with uplighting and a new aluminum local-lighting unit.

MILLER WRAPPING & SEALING MACHINE CO. (43, 44, 44AA)
18 S. Clinton St., Chicago, Ill.
Features a Corley Miller wrapping machine that wraps merchandise in cellophane or polyethylene.
Representatives at booth:
R. H. Freeman
F. Faletti
B. Arvidson

MILTON MACHINE WORKS, INC. (116)
Box 189, Milton, Pa.
Features aluminum-alloy tricot beams with forged-aluminum heads, in both 13¾-in. and 21-in. sizes.
Representatives at booth:
W. D. Leinbach
J. S. Billig
C. J. Anchor
G. W. Blunt

MODERN TEXTILES MAGAZINE (23AA)
303 Fifth Avenue, New York, N. Y.
Features a textile publication.

L. P. MULLER & CO. (222-222AA)
Drexel Bldg., Philadelphia 6, Pa.
Features cotton yarns and products.
Representatives at booth:
H. D. Muller
H. G. Harper
J. T. Hawthorne
J. M. Matlack
F. H. Ward
H. R. Penington
T. H. Nicholson
T. C. Brown
W. C. Muller
W. J. Scott
T. Dove
A. B. Reid
H. R. Peck
E. O. Penington

NARROW FABRIC CO. (329AA)
Reading, Pa.
Features braided, knitted, and woven elastics.
Representatives at booth:
S. R. Fry
J. W. Sweeney
C. J. Busch
R. G. Manderbach
F. S. Pierce
G. Dudley, Jr.
S. S. MacCallum
K. Lieb

NATIONAL ASSN. OF HOSIERY MFRS. (105A)
468 Fourth Ave., New York, N. Y.

NATIONAL BUNDLE TYER CO. (516)
Blissfield, Mich.
Features tying machines.
Representatives at booth:
G. P. Saxton
J. B. Saxton

NATIONAL KNITTED OUTERWEAR ASSN. (105A)
386 Fourth Ave., New York, N. Y.

NATIONAL VULCANIZED FIBRE CO. (293-294)
Wilmington 99, Del.
See Lestershire Spool & Mfg. Co. and Fibre Specialty Mfg. Co.

NORTH AMERICAN RAYON CORP. (297-298, 307-308)
261 Fifth Ave., New York, N. Y.
See American Bemberg Corp.

ONYX INTERNATIONAL (388)
190 Warren St., Jersey City 2, N. J.
See Specialty Products Co.

ONYX OIL & CHEMICAL CO. (210-211)
190 Warren St., Jersey City 2, N. J.
Features chemical specialties for knit-goods manufacturers, including the recently developed Nylonyx DS, for preparing the dipping solution. Samples of hosiery illustrating the advantages of presetting nylon by the dip system will also be on display.
Representatives at booth:
L. P. Brick
A. R. Jenny
A. C. Mackey
E. W. Peters
R. A. Watson
J. W. Huber
C. R. Smith

ORDNANCE GAUGE CO. (110 to 112)
Amber & Hagert Sts., Philadelphia, Pa.

PANAMERICAN PUBLISHING CO. (14-15)
570 Seventh Ave., New York, N. Y.
Features Spanish-language publications.

PARAMOUNT TEXTILE MACHINERY CO. (284-285, 301 to 304)
131 S. Wabash Ave., Chicago 3, Ill.
Features hosiery-finishing equipment, including a new Paramark transfer machine, a junior presetter, and hosiery-drying forms and table.
Representatives at booth:
H. Pope, Jr.
W. P. Pope
J. C. Fenley
W. H. Albertson
O. A. Siegel
L. D. Ross
W. E. Pike
L. J. Albertson
H. Richter
H. Campbell
J. A. Jarvis
G. E. Dunn
F. Snogren

JOSEPH PERNICK CO., INC. (199)
54-19 Flushing Ave., Maspeth, L. I., N. Y.
Features a knit-goods calender, a measuring and examining machine, and a new variable-speed edge-drive for the calender.
Representatives at booth:
L. Pernick
D. Pernick
D. Haft

PHILADELPHIA DYE WORKS (185)
G & Lycoming Sts., Philadelphia, Pa.
Features samples of dyeing in woolen, worsted, and synthetic yarns as well as top, raw stock, and skein dyeing. Samples of Kelpie shrink testing will also be on display.
Representatives at booth:
L. H. Mason
J. R. Shoch
W. E. Knipe, III
T. O'Donnell

PHILADELPHIA METAL DRYING FORM CO., INC. (103 to 105)
4550 Torresdale Ave., Philadelphia, Pa.
Features hosiery-drying forms and accessory equipment.

PHILADELPHIA PENN WORSTED CO. (407)
York & Jasper Sts., Philadelphia 25, Pa.
Features synthetic, worsted, and cotton novelty and decorative yarns for knitting and weaving.
Representatives at booth:
M. N. Roux
C. H. Mandeville
W. M. Field
F. Mayer

WILLIAM A. POPP ASSOCIATES, (286)
3701 N. Broad St., Philadelphia, Pa.
Features cotton, spun nylon, spun Orlon, and blended yarns.
Representatives at booth:
W. A. Popp
R. D. Wood

PREMIER TEXTILE MACHINERY CO., INC. (1, 1A, 1B)
440 Mercer St., Jersey City 6, N. J.
Features a high-speed warp-knitting loom and fabrics produced on this loom.
Representatives at booth:
S. Hoffman
J. W. Block
B. Hetu
I. Perez
R. O. Fortier

PROCTOR & SCHWARTZ, INC. (188 to 193)
7th St. & Tabor Rd., Philadelphia 20, Pa.
Features a new preboarding machine for nylon hosiery, a new model of the Con-o-matic washer, and a tray-dryer for women's nylon hosiery.
Representatives at booth:
C. S. Tiers
W. Merrigan
W. Poole
T. Mahan
P. Schaffer
D. Cunningham
C. W. Schwartz, IV
M. T. Fleming

QUEENS MACHINE CO. (127 to 129)
262-284 Starr St., Brooklyn, N. Y.
Features fully-automatic, tandem-carriage, links-and-links knitting machines; a fully automatic V-type flat machine; a fully automatic flat V-type double-head border machine; a circular string-border machine; and for the first time on

SEE THEM IN

ACTION

AT THE

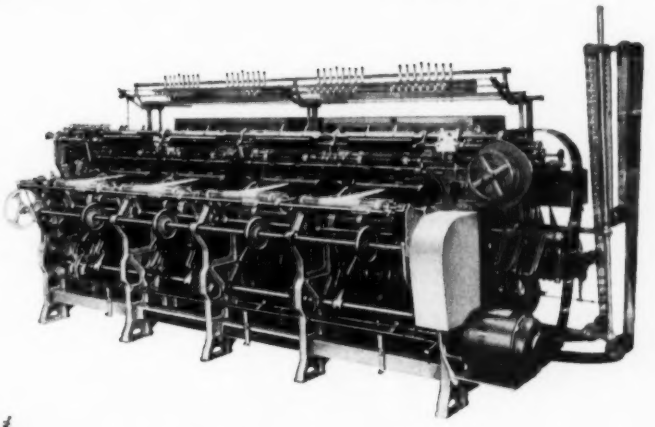
Knitting Arts Exhibition

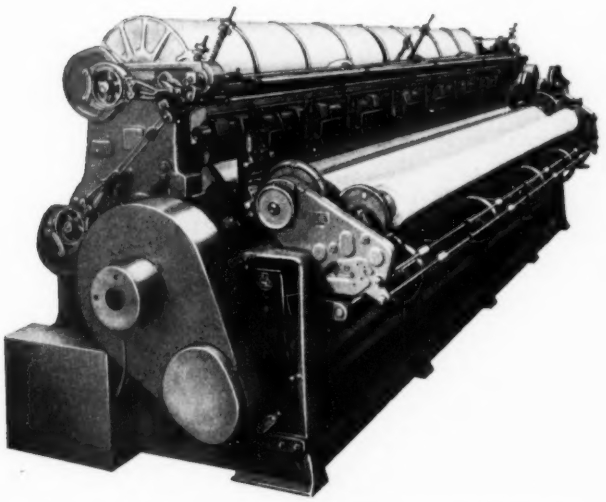
Booths Nos. 16 to 23B inclusive,
April 27 thru May 1, 1953,
Atlantic City, New Jersey

REINER
50 YEARS
OF PROGRESS
1903 1953

REINER TWIN KNITTER →

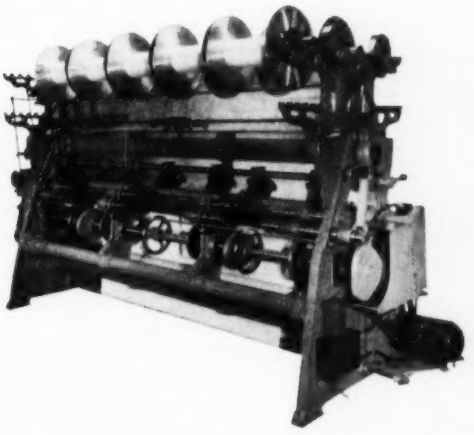
The Reiner 72 Gauge Twin Knitter is an automatic machine with up to 8 yarn carriers, lace attachment, 3 carrier attachment, loopless toe, fancy heels, etc.. It operates in a number of leading mills, producing unexcelled stockings in true Twin Knitter tradition.





← REINER TRICOT MACHINE

The Reiner Tricot Machine Model RT-6 assures highest quality fabric at sustained top speeds. Newest features include: lighter knitting elements, smoother motions and guide bar action, larger cams and cam rollers, improved automatic beam feeding device, redesigned guide bar hangers, etc.



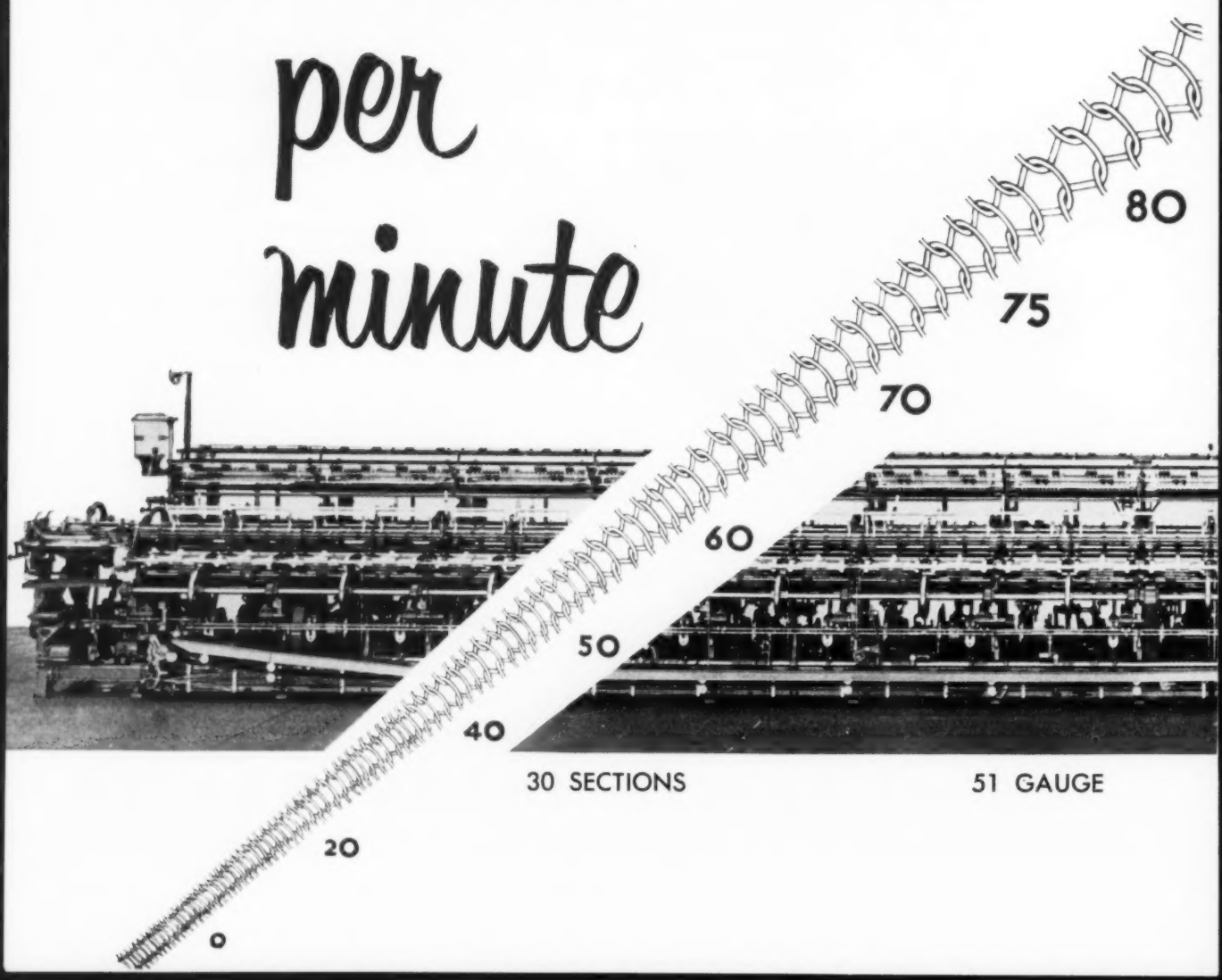
REINER RASCHEL MACHINE →

A versatile machine with an unlimited pattern range. Up to 8 guide bars — chopper plate — plush points — automat—crepe attachment—stitch comb—beam feeding device for elastic fabrics, etc.. A fast, rugged, versatile performer!

ROBERT REINER, INCORPORATED

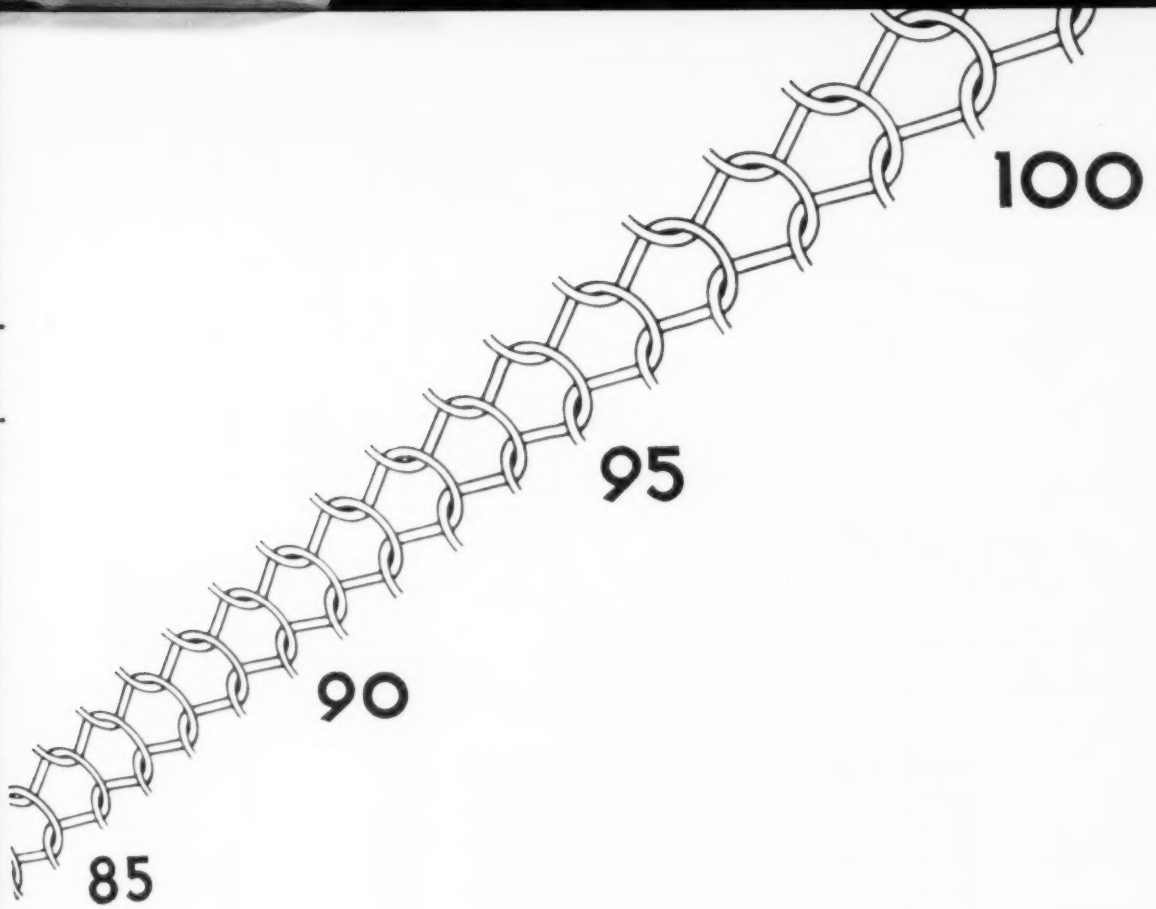
550-564 Gregory Avenue — Telephone: UNion 7-0502, LOngacre 4-6882 — Weehawken, New Jersey

It knits 100 courses per minute



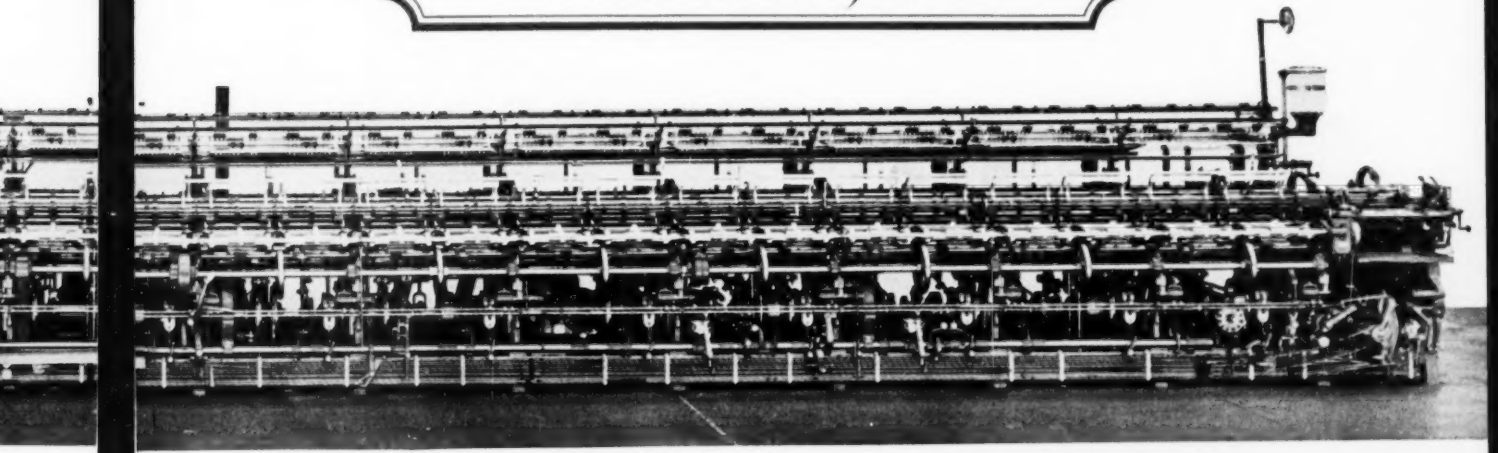
30 SECTIONS

51 GAUGE



The "READING 100"

Full-Fashioned Knitting Machine



60 GAUGE

66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U. S. A.

Complete Review

of the

41st Knitting Arts Exhibition

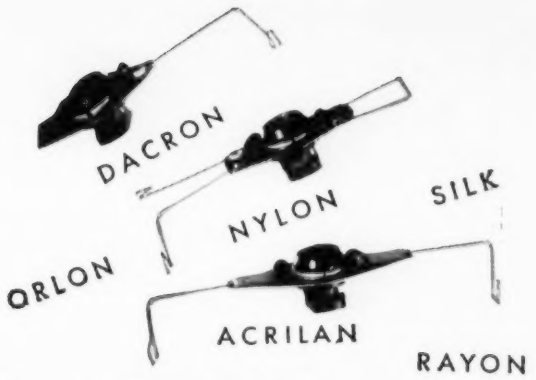
will appear in the

JUNE ISSUE

of

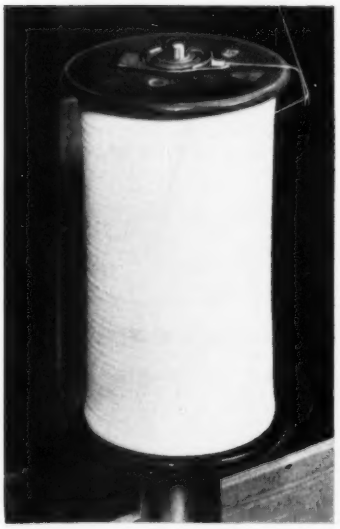
TEXTILE WORLD

Do You SPIN or TWIST



Here's Real Help

- **HERR FLYERS – producing light tensions at high speeds**
- **HERR CONICAL RINGS – to obtain cleaner, heavier doffs, smoother yarn**



See Us

BOOTH 96B
KNITTING ARTS EXHIBITION
ATLANTIC CITY

• See the full line of lightweight bobtail flyers that can take care of nylon and high crepe yarns in a way to produce light tensions at high speeds. HERR flyers are perfectly balanced for accurate yarn control and reduced vibration. Let us show you how HERR can increase the efficiency of your mill.

• If you spin or twist textile fibers, you'll want to find out about HERR Conical Rings at the Knitting Arts Exhibition at Atlantic City from April 27th through May 1st. HERR Conical Rings stop yarn breakage, permit heavier doffs, keep yarns cleaner and produce smoother yarn.

Let HERR help solve your spinning and twisting problems. We'll show you how to adapt your equipment to any textile fiber or blend with HERR Conical Rings and Flyers. Write today!

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... STATE .....

Ask for help on your problem.

HERR MANUFACTURING CO., INC.

309 FRANKLIN STREET, BUFFALO 2, NEW YORK

Guide to Exhibitors

(Continued)

exhibit, a Bellow overlock machine. Spare parts, replacement parts, and accessories will also be on display.

Representatives at booth:
M. Zimic — A. Miskovsky
R. Lanthier — J. Miskovsky

ROBERT REINER, INC. (16 to 23)

550-64 Gregory Ave., Weehawken, N. J.

Features a high-speed tricot machine, Model RT-6; a high-speed raschel machine; and a 72-gauge full-fashioned hosiery machine.

Representatives at booth:
Dr. R. Reiner — H. L. Wirth
F. Lambach — G. Moeblus
K. T. Marx — W. Horn
S. de Lorenzo
A. Schoenenberg

RELIANCE ELECTRIC & ENGINEERING CO. (410-411)

1088 Ivanhoe Rd., Cleveland, Ohio

Features drives and motors.

A. H. RICE CO. (531)

Pittsfield, Mass.

RICHMOND OIL, SOAP & CHEMICAL CO., INC. (117)

1041 Frankford Ave., Philadelphia 25, Pa.

Features chemicals for throwing, knitting, dyeing, and finishing. Lubricants, cleaners, and penetrants will be included in the display.

Representatives at booth:
W. Alkus — J. W. Lederer
M. W. Levi — H. M. Rubin
W. Kamarek — J. W. Schenkel

ROTH CUTTING APPLIANCES

407 Central St., Newark, N. J.

Features an electric spreading machine for knit and woven goods.

Representatives at booth:
G. Roth — S. Marotta
A. Roth — F. Kormaier

ROYAL COTTON MILL CO. (31-32)

Saxapahaw, N. C.

Features various types of yarns.

Representatives at booth:
B. E. Jordan — F. Longerier
B. E. Jordan, Jr.

ROYERSFORD NEEDLE WORKS, INC. (311-312)

Royersford, Pa.

Features spring-beard needles, points, hooks, sinkers, dividers, jacks, k. o. bits, chains, straps, and accessories for full-fashioned hosiery. Needles and points for Tompkins, tricot, and milanese machines will also be shown.

Representatives at booth:
F. O. Heller — C. Bortz
R. W. Breidenbach

ST. REGIS PAPER CO., PANELYTE DIV. (522)

230 Park Ave., New York 17, N. Y.

Features laminated phenolic plastics, including sheets, rods, and tubes, as well as other fabricated specialties. Plastic bobbins for nylon processing, pirn caps, take-up tubes, and sizing tubes will also be shown.

Representatives at booth:
D. F. Sweet — J. T. Murphy
J. Zeier — D. Davidson
F. Delnevo — W. Merideth
H. Titus

SAUQUOIT SILK CO., INC. (237-238)

302 Fig Street, Scranton 5, Pa.

Features a reception booth.

Representatives at booth:
C. L. Havey
E. C. West
L. W. Schoelpple
P. E. Walder
F. N. Stanley
M. H. Smith
A. C. Bigelow, Jr.
E. P. Schwarze
W. H. Hutchinson
E. McNabney

SCHOLLER BROS., INC. (232-233, 258-259, 270-271)

Collins & Westmoreland Sts., Philadelphia 34, Pa.

Features textile soaps, softeners, oils, and finishes. Samples of fabrics treated with these substances will be on display.

Representatives at booth:
F. C. Scholler
E. S. Atkinson
J. F. Noble
J. O. Sweitzer
L. M. Boyd
W. A. Daniels
W. R. Sargent
W. S. Truette
E. J. Fitzgerald, Jr.

SCOTT TESTERS, INC. (357)

101 Blackstone St., Providence, R. I.

Features the new Accr-O-Meter weighing system, the Clemson bundle fiber tester, the X5 economy single- and tensile-tester for knitting yarns, and a twist counter with lens.

Representatives at booth:
H. W. Horton
J. E. Hargreaves
D. C. Scott, Jr.

SCOTT & WILLIAMS, INC. (142 to 153)

350 Fifth Ave., New York 1, N. Y.

Features sample hose, underwear, outerwear, foundation garments, and fabrics.

Representatives at booth:
B. J. Faucette — J. S. Hubbard
H. G. Kellett — F. W. Smith
W. E. Chaput — W. D. Ide
J. G. Schmidt — F. Wakefield
F. H. Hallenbeck
H. G. Ferree
W. O. McMillan

SCOVILL MFG. CO. (520-521)

Waterbury, Conn.

Features Gripper snap fasteners.

Representative at booth:
R. Hall

SELLERS MFG. CO. (31-32)

Saxapahaw, N. C.

Features various types of yarns including packaged-dyed and specialty yarns.

Representatives at booth:
B. E. Jordan
B. E. Jordan, Jr.
F. Longerier

A. G. SEWELL (181 to 183)

1617 Pennsylvania Blvd., Philadelphia, Pa.

See Harriet-Henderson Cotton Mills.

SHELL OIL CO. (83-84)

50 W. 50th St., New York, N. Y.

Features textile lubricants.

SIMPLEX PACKAGING MACHINERY, INC., DIV. OF FOOD MACHINERY & CHEM. CORP. (43, 44, 44AA)

534 23rd Ave., Oakland, Calif.

Features an automatic bag-making machine for making printed bags from roll-form cellophane that simultaneously applies and imprints a label.

Representatives at booth:
W. A. Wolff — M. W. Smith

SINGER SEWING MACHINE CO. (354 to 356, 389 to 391)

149 Broadway, New York 6, N. Y.

Features a single-needle lockstitch machine, a label-sewing machine, totally enclosed electric transmitters, overedging machines, a stocking seamer, and attachments for attaching pleated-nylon trim, sewing on prefolded labels, inserted endless flat elastic, and making buttonholes.

Representatives at booth:
F. A. Derr — C. A. Stevens
F. Walling — A. Reuther
P. R. Mohney — J. McGraw
L. D. Peak — P. Kone
W. A. Ketcham
H. C. Morehouse
H. Wedemeyer

SMITH, DRUM & CO. (52 to 61)

432 W. Allegheny Ave., Philadelphia, Pa.

Features a newly designed high-temperature package-dyeing machine.

Representatives at booth:
H. S. Drum — A. Bagian
R. N. Smith — R. W. Foltz
A. P. March — P. M. Parrott
W. C. Dodson — S. Huffstetler
J. M. Ballentine

SONOCO PRODUCTS CO. (373-374)

Hartsville, S. C.

Features cones, tubes (including the new Duroweld tubes), spools, cots, cores, bobbins, and other textile specialties.

Representatives at booth:
C. H. Campbell
J. B. Coxe
O. Fayne
C. Burnham
W. Hillsgrove
K. G. Lewis
W. R. Peacock
W. K. Lewis
W. B. Broadbent
J. A. Reagan, Jr.

SOUTHERN MERCERIZING CO. (213-214)

Tryon, N. C.

Representatives at booth:
C. J. Beaver — E. Golden
W. C. Ward — F. Lunday
W. H. Smith — C. Peffer
H. H. McDonald
R. D. McDonald
S. Jacobs

SOUTHERN TEXTILE MACHINERY CO. (392-393, 426-427)

Paducah, Ky.

Features a SOTCO-model and Model P loopers, a small cylinder looper for surgical stockings and gloves, tables, stands, and accessories.

Representatives at booth:
T. A. Paxton — C. H. Holcomb
R. N. Parkin — A. George

SPECIALTY PRODUCTS CO. (210-211)

190 Warren St., Jersey City, N. J.

Features textile chemicals for knitters and throwsters.

Representatives at booth:
S. J. Singer
R. Raas

MORRIS SPEIZMAN CO., INC. (86 to 91)

508 W. Fifth St., Charlotte, N. C.

Features an automatic transfer-applying machine and an automatic Simplex sock-turning machine.

Representatives at booth:
M. Speizman — J. H. Barnes
T. Valenstein — E. D. Weikert
M. P. Deleo — A. C. Gregg

SPOOL COTTON CO. (112B)

745 Fifth Ave., New York 22, N. Y.

Features cotton, nylon, Dacron, and Orlon sewing thread.

Representatives at booth:
H. Ross — F. De Luca
A. Peklo, Jr. — R. Draper
F. I. Cannon — W. M. Hinton
W. C. Curley — J. J. Pikel
H. P. Zettwoch

STAMPAGRAPH CO., INC. (78)

79 Alexander Ave., New York 54, N. Y.

Features hot-iron transfers for one, two, and three colors, Kleen-Stik self-adhesive labels, and embossed seals and labels on foil and paper.

Representatives at booth:
G. Chadwick
G. K. Chadwick
E. A. Reilly

STANDARD-COOSA-THATCHER CO. (215-216, 239-240)

18th & Watkins Sts., Chattanooga, Tenn.

Features standard Durene yarns and SCT cotton sewing threads.

Representatives at booth:
S. H. Harris — E. S. Davis
F. R. Harris — A. H. Thatcher
W. M. Hall — D. B. Barlow
E. R. Dillmore — W. S. Lawson
C. F. Smith — J. P. Rickman
J. H. Clarke — J. O. Foil
R. G. Miller — M. Lyon
R. C. Thatcher, Jr.

STEELE CANVAS BASKET CO., INC. (502)

199 Concord Turnpike, Cambridge 40, Mass.

Features baskets, trucks, hampers, and bags made from canvas.

Representatives at booth:
A. E. Pratley
G. L. Whynaught

STERLING ENGINEERING & MFG. CO. (71)

173 Gilligan Street, Wilkes-Barre, Pa.

Features self-stacking boards for the handling of bobbins, cones, and tubes. Yarn-handling trucks will also be on display.

Representative at booth:
G. McGee

STEWART-WARNER CORP., ALEMITE DIV. (402-403)

1826 Diversey Pkwy., Chicago 14, Ill.

Features lubrication equipment, including Accumeter centralized lubrication, Oil-Mist lubrication, barrel-to-bearing lubricating systems, Versatal material-pumping equipment, and a new 1-gal.-reservoir Oil-Mist lubricator.

Representatives at booth:
J. Esbenshade
A. Courtois
C. Benedict

STOP-MOTION DEVICES CORP. (106 to 109)

1471-77 Fulton St., Brooklyn, N. Y.

Features electric stop motions for all types of knitting machines.

Representatives at booth:
N. J. Tellerman — F. Weston
G. F. Connors — E. Vossen
W. Chaplin

SUPREME KNITTING MACHINE CO., INC. (219 to 221, 234 to 236)

105 Johnson Ave., Brooklyn 6, N. Y.

Features a display of fabrics that were produced on various models of Supreme circular knitting machines.

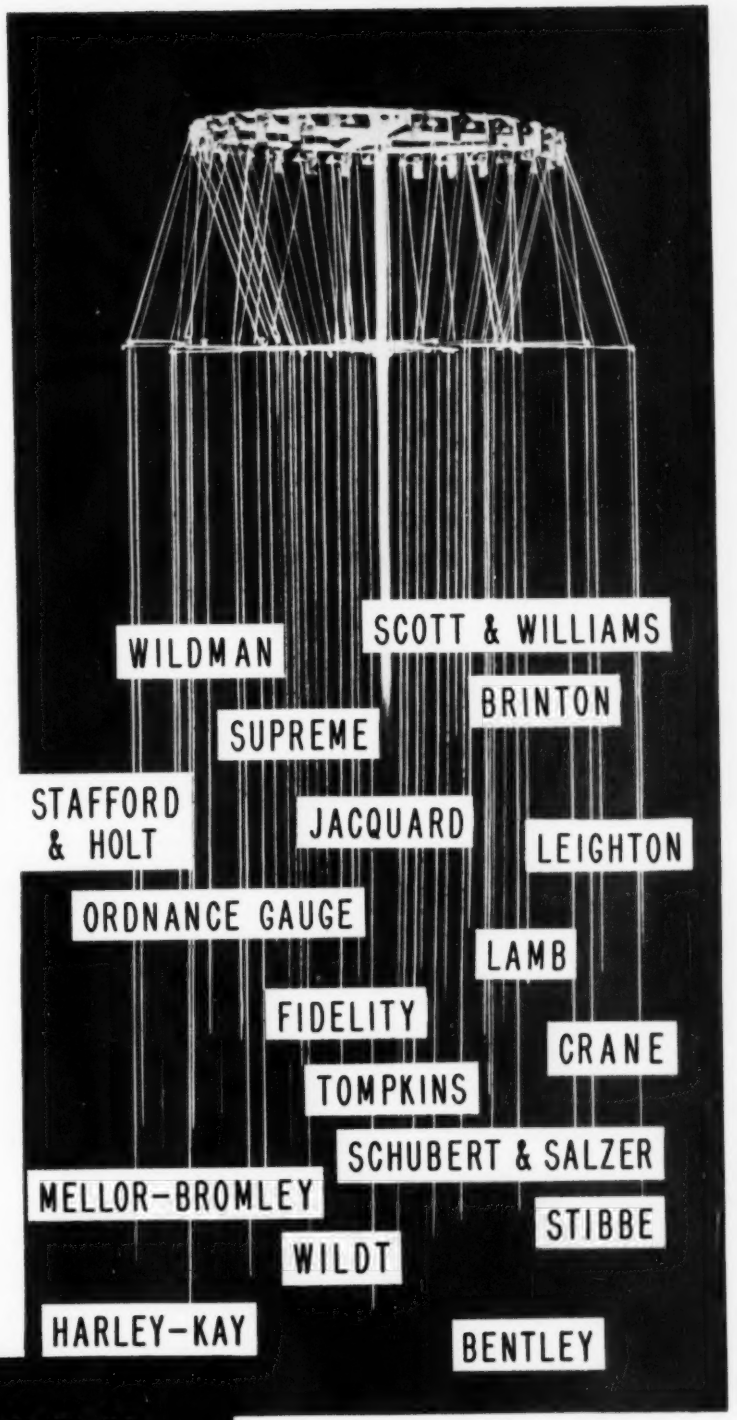
Representatives at booth:
S. Mishcon — C. Depuis
L. Mishcon — D. Depuis
I. Golden — A. Malluck
L. Maurer
H. Augulnek

WESCO
Tops 'em all

Electric Stop Motions For
Outerwear • Underwear • Hosiery

Talk to the men who design and build the Knitting machines that serve the industry so well. Talk to the men who buy them and maintain them down through the years. They'll all tell you — ***Wesco Stop Motions*** protect Machines against Press-offs, prevent costly needle breakage, improve production and increase profits.

Wesco makes a complete line of needle protectors, spring needle detectors, hole and press-off detectors for open-head machines and press-off detectors for rib machines. When buying new machines always specify ***Wesco*** and get the standard the world over. For a copy of our catalog just address —



STOP-MOTION DEVICES CORP.

1471-77 Fulton Street, Brooklyn 16, N. Y.

We'll be looking for you at the
Knitting Arts Exhibition Booths —
106-107-108-109
Atlantic City, New Jersey
April 27-May 1, 1953

 For more information, write direct or use Reader Service post card.

Exhibitors Guide to

(Continued)

SYNTHANE CORP. (200 to 202)
Oaks, Pa.
Features laminated plastic items. A collapsible bobbin and vibrator blocks are among the new products to be shown. Textile rollers, nonsnagging redraw caps, headless-package tubes, sizing bobbins and caps, and piping for nylon-sizing machines will also be on display.
Representatives at booth:
R. R. Titus, J. K. Johnson, E. E. Smith, C. B. Moss, H. Widdop, F. C. Nave, R. B. Galloway

SYNTHETIC YARNS, INC. (278 to 280)
Lowell, Mass.
Features yarns and put-ups representative of their throwing.

TENNESSEE EASTMAN CO. (362-363)
Kingsport, Tenn.
Features Eastman acetate yarn and staple fiber, including white Estron yarn and staple, Chromspun yarn and staple, flat filament yarn, I-beam yarn, thick-and-thin yarn, and Chromspun thick-and-thin yarn.
Representatives at booth:
C. P. Bertland, J. R. Sherrill, A. E. Booker, W. T. Cummins, P. B. Coan, R. B. Cook, A. A. Clow, G. W. Malloy, R. W. Greene, G. C. King, R. W. Leswing, F. J. Ruddock, A. M. Tenney, Jr., G. Conaway, H. L. Waters

A. M. TENNEY ASSOCIATES, INC. (362-363)
260 Madison Ave., New York 16, N. Y.
See Tennessee Eastman Co.

TEXTILE AGE (225AA)
22 W. Putnam Avenue, Greenwich, Conn.
Features a textile publication.

TEXTILE INDUSTRIES (125-126)
806 Peachtree St. N.E., Atlanta, Ga.
Features a textile publication.

TEXTILE MACHINE WORKS (318 to 322, 343 to 347, 368-369, 376-377)
P.O. Box 1382, Reading, Pa.
Features a reception booth.
Representatives at booth:
R. C. Wetzel, L. R. Thun, R. N. Apprich, E. P. Master, N. E. Richards, P. Kroener, E. W. Kaul, H. Wade, R. J. Ryan, L. P. Garrigan, L. C. Scheffey, Jr., E. Frank, R. W. Weaver, R. Greiss, F. B. Hower, H. Haupt, E. A. Shoemaker, H. Stuber, H. Printz, G. Heaton, K. Renninger, H. Fiedler, C. Moyer, D. Hehr, W. Dufft, H. Wendling, E. Zettlemoyer, F. Simon, E. Rebmann, G. Henning, F. Hughes, L. Yeager, D. McDonnell, L. C. Harrison

TEXTILE WORLD (85, 92)
330 W. 42nd St., New York 36, N. Y.
201 E. Coffee St., Greenville, S. C.
Features a textile publication.
Representatives at booth:
E. D. Fowle, R. B. Pressley, P. M. Thomas, T. B. Winston, R. C. Scott, W. Buxman, G. M. Moisson, W. B. Dall, J. H. Blore, A. W. Fisher, J. H. Kennedy, H. C. Harvey, J. C. White, Jr., R. L. Chisholm

THREADS, INC. (26-27)
1006 S. Michigan Ave., Chicago, Ill.

TOMPKINS BROS. CO. (454-455)
623 Oneida St., Syracuse, N. Y.
Features Tompkins C.K. machines with spring and latch needles, drives, electric stop motion, and furnishing wheels.
Representatives at booth:
H. Fairchilds, J. W. Bullard, S. Simek, W. A. Ingalls, Mrs. M. Kellerhouse

THE TORRINGTON CO. (331 to 334)
59 Field St., Torrington, Conn.
Features all types of needles for knitting and sewing. Metal specialties and bearings will also be shown.
Representatives at booth:
W. C. Thompson, H. D. Blake, W. W. Blelock, C. R. Johnson, W. R. Reid, Jr., F. G. Stubbs, C. H. Rowe, L. W. Losee, C. T. Spalding, W. C. Wiechardt

TUBULAR TEXTILE MACHINERY CORP. (89C-89D)
33-61 54th St., Woodside, L. I., N. Y.
Features finishing machinery for circular-knit fabrics. The Tube-Tex all-purpose calender will be on display, as well as an exhibit covering the processing of circular-knit goods from the dyehouse to the cutting room.
Representatives at booth:
E. Cohn, J. Sasson, D. Foreman, M. Gold, L. Rothenberg

TURBO MACHINE CO. (154 to 159)
840 W. Main St., Lansdale, Pa.
Features the Turbo AD48 machine for combination preboarding and boarding and the Turbo F48 finish-boarding machine.
Representatives at booth:
H. W. Matthews, B. Hammel, F. Huguenin, B. C. Hall, P. Wenhold, A. Karcewski, W. N. DeTurk

TURNER TRANSFER, INC. (532)
P.O. Box 175, Greensboro, N. C.
Features pictures of hosiery-machinery moving. Bookings for free airplane trips between Atlantic City and Reading, Pa., will be available.
Representatives at booth:
G. M. Turner

E. W. TWITCHELL, INC., PACKAGING DIV. (65-66)
2801 N. 3rd St., Philadelphia 33, Pa.
Features hosiery and other textile-packaging designs.
Representatives at booth:
J. J. Sullivan, F. Miller, R. Therrell, B. Weingard, W. F. Burgess

UNDERWEAR INSTITUTE (105A)
2 Park Ave., New York, N. Y.

UNION SPECIAL MACHINE CO. (323-324, 341-342, 348-349, 366-367)
400 N. Broad St., Chicago, Ill.
Features sewing machines.

UNITED ELASTIC CORP. (33-34)
Easthampton, Mass.
Features woven elastic webbings and recently developed nonslip webbings for hosiery.
Representatives at booth:
R. A. Waite, F. L. Dorr, W. E. Dalby, D. B. Cameron

UNITED KNITTING MACHINE CO. (63-64)
2734 N. 2nd St., Philadelphia 33, Pa.
Features parts and attachments for full-fashioned hosiery machines, as well as examining equipment. Samples of fabric for sweaters and neckties will also be on display.
Representatives at booth:
F. G. Weisbecker, J. DeStephen

U. S. HOFFMAN MACHINERY CORP. (120AA-120BB)
105 Fourth Ave., New York, N. Y.

U. S. RUBBER CO., LASTEX YARN & RUBBER THREAD DIV. (299-300, 305-306)
1230 Ave. of the Americas, New York 20, N. Y.
Features Lastex and Laton elastic yarns; Lactron extruded rubber thread; and Revere-cut rubber thread.
Representatives at booth:
P. Bergh, H. B. Cobb, W. J. Connelly, P. Linke, A. R. Engel, P. J. Regan, W. F. Giddings, G. Weston, C. C. LoPresti, P. Westphal, R. H. Ostrander, H. A. Young, R. E. Parks, Jr.

U. S. RUBBER CO., TEXTILE DIV. (421-422)
1230 Ave. of the Americas, New York, N. Y.
Features knitting yarns and products made from these yarns.
Representatives at booth:
J. W. Solomon, R. J. Keane, H. E. Anderson, W. J. McCarty, W. H. Bric, Jr., J. H. Shaw, S. K. George, B. W. Wiesen, R. S. Gibson, J. B. Jackson, R. W. Jennette, V. C. McQuiddy, Jr.

U. S. TEXTILE MACHINE CO. (93 to 98, 95A-96A)
411 Gilligan St., Scranton 8, Pa.
Representatives at booth:
A. W. Thomas, S. E. Stahler, P. J. Thomas, V. A. Schiffer, A. W. Thomas, Jr., N. F. Gubitose

UNIVERSAL WINDING CO. (130 to 135)
P.O. Box 1605, Providence 1, R. I.
Features the Unirail uptwister, a model-200 Redraw, a No. 50 Precision winder, a No. 44 Roto-Coner, a No. 210 Twister-Coner, and a No. 955 Take-up.
Representatives at booth:
W. S. Warren, R. C. Pillsbury, T. L. Cotter, W. L. Paulhamous, F. P. Barrie, J. R. Breen, H. H. Bucklin, Jr., H. D. Kernan, Jr., E. C. Parish, Jr., W. J. Quinn

UTICA NOVELTY & MILL SPECIALTY CO. (79 to 82)
2145 Dwyer Ave., Utica 2, N. Y.
Features a conveyor for air press, a combination cutting and winding machine, a collarette cutter with roll attachment, and a hand laying-up machine.
Representatives at booth:
J. A. Firsching, Jr., D. Firsching, J. A. Firsching, III

VALDESE MFG. CO., INC. (263-264)
Valdese, N. C.
Features dyed yarns.
Representatives at booth:
E. M. Spencer, H. M. Peshamer, W. H. Smith

VEEDER-ROOT, INC. (265)
20 Sargeant St., Hartford, Conn.
Features a completely redesigned series of multiple-shift counters that allow for three-shift operation and an additional unit for the determination of roll lengths. Counting devices for wage-incentive plans, production control, uniformity, and quality control will also be shown.
Representatives at booth:
A. E. Kallinich, T. Nelson, G. L. Logan, W. T. Heydt, R. E. Walker, R. W. Moller

VENANGO ENGINEERING CO. (464-465)
G & Lycoming Sts., Philadelphia 24, Pa.
Features conventional and high-temperature dyeing machinery for packages, raw stock, hosiery, and sweaters.
Representatives at booth:
A. Robertson, W. Stegers, C. H. McCandless

VICTOR RING TRAVELER CO. (112C-112D)
20 Mathewson St., Providence, R. I.
Features a reception booth.
Representatives at booth:
E. R. Jerome, B. H. Waterman, E. L. Connor, E. Cranshaw

VIRGINIA-CAROLINA CHEMICAL CORP. (6)
500 Fifth Ave., New York, N. Y.
Features Vicara blends. Fabrics and garments made from these blends will be on display.
Representatives at booth:
J. H. Karrh, R. Hagner, J. F. Yeates, M. R. Clark, A. Amatruda, C. Bost, A. G. Koos, W. Backus

WALTON LABORATORIES, INC. (456 to 458)
1186 Grove St., Irvington 11, N. J.
Features for the first time the Aqua-Sorber dehumidifier for summer conditioning. Industrial humidifiers, dehumidifiers, and humidity controls and indicators will also be featured.
Representatives at booth:
J. B. Felderman, J. R. Lewis

G. H. WATERMAN CO. (378)
1040 Hospital Trust Bldg., Providence, R. I.
Features yarns.

WHITIN MACHINE WORKS (414 to 415AA, 440-441, 452-453)
Whitinsville, Mass.
Features a Model D, full-length, 168-in. tricot knitting machine in operation.
Representatives at booth:
H. Moss, R. F. Waters, G. F. McRoberts, A. Scott, C. May

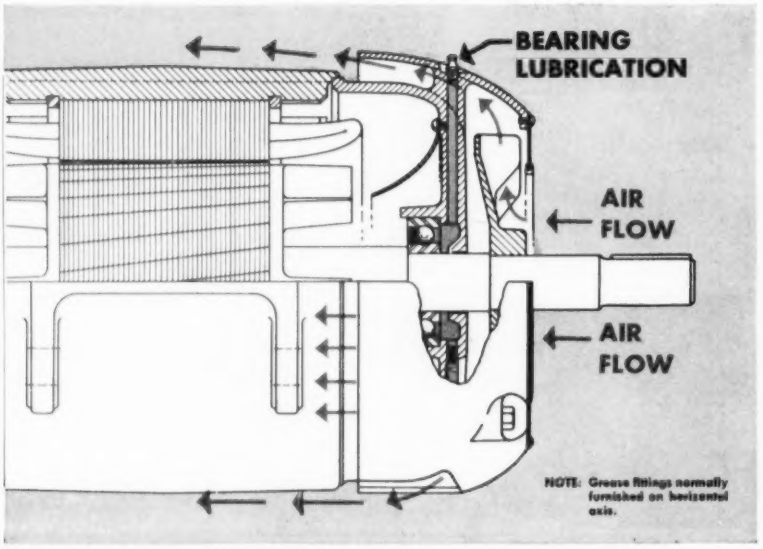
WILDMAN MFG. CO. (136 to 141)
Elm & Astor Sts., Norristown, Pa.
Features a reception booth.
Representatives at booth:
K. Howie, J. Craig, F. E. Paul, L. J. Brooke, J. J. Brennan, L. Bickel, J. H. Hill

Knitting Arts Exhibition
to be held in the
Atlantic City Auditorium
Atlantic City, N. J.
from April twenty-seventh to May first
Nineteen hundred and fifty-three

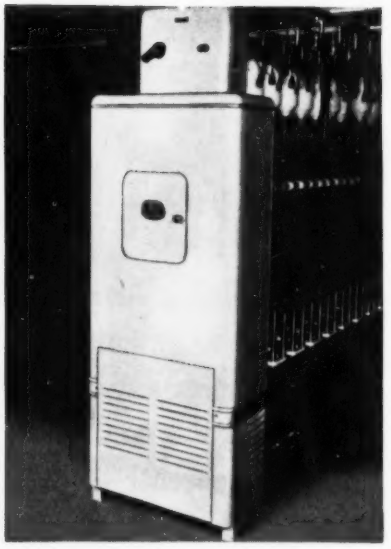
Frudaricka Boger
President

 For more information, write direct or use Reader Service post card.

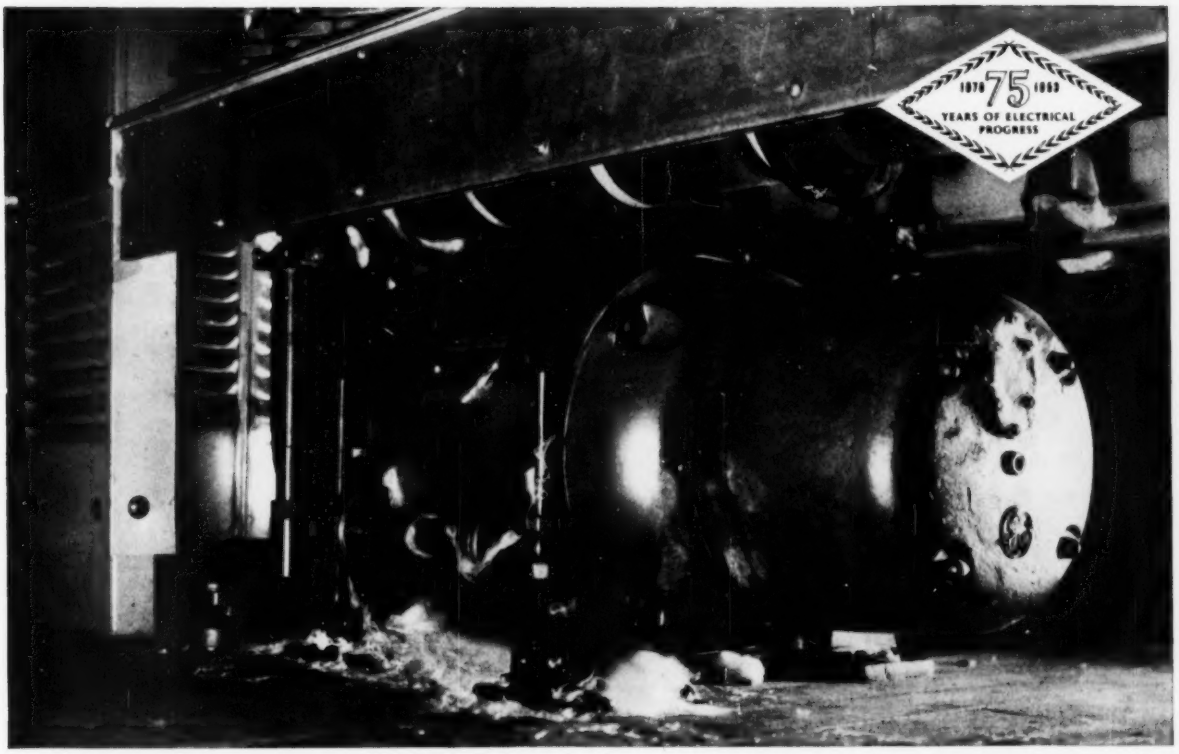
SG-1 Gwaltney spinning frames



MAINTENANCE TIME IS REDUCED because positive lint-expulsion keeps motor clean, large grease reservoirs and convenient pressure-relief fittings make lubrication infrequent and easy—without disassembly.



STREAMLINED MOTOR CONTROL is compact, conveniently-located, designed especially for the SG-1 frame.



AISLE SPACE IS SAVED because compact, totally-enclosed, fan-cooled G-E motor is mounted beneath the SG-1 spinning frame. Non-clogging design of external cooling fan and fan housing allows free passage of lint-laden air.

driven by new-type G-E motors

Two motor designs—fan- or water-cooled—meet all mill needs

WATER-COOLED DESIGN uses large-diameter Saran tubing wound directly around coil ends—assures maximum cooling efficiency.

Saco-Lowell's new SG-1 Gwaltney spinning frame—the latest in modern textile machinery—required equally new motor designs.

First, Saco-Lowell engineers drew up complete drive requirements. Then they worked with the General Electric design and application engineers who developed the two new types of SG-1 spinning frame motors: one, totally-enclosed, fan-cooled, non-clogging; the other, totally-enclosed and water-cooled.

BOTH MOTORS ARE COMPACT, EFFICIENT, DEPENDABLE

1. They minimize cleaning problems. Both motors are protected against entry of lint.
2. They save aisle space. Both are compactly designed to fit under the spinning frame.
3. They promote even spinning room temperatures.
4. They take varying spinning loads in stride.
5. They simplify maintenance. Grease fittings are conveniently located on sides of motor. Relubrication is easy and infrequent.

Your G-E apparatus sales representative can give you further details. General Electric Co., Schenectady, New York 654-28

Engineered Electrical Systems for Textile Mills

GENERAL ELECTRIC

Is long service life at low cost your problem?

here's how leading tractor manufacturers solve it with NEEDLE BEARINGS

Many makers of farm tractors specify Torrington Needle Bearings because of their relatively low cost and their long maintenance-free operation under rugged conditions.

Needle Bearings have been *performance-proved* on thousands of tractors in service on farms across the nation.

Their use on steering arms and knuckles provides easier turning, helps to reduce operator fatigue. On hydraulic controls and transmission assemblies where small size is important, Needle Bearings give high-capacity, anti-friction performance.

Manufacturers throughout industry have made Needle Bearings "standard equipment" in countless applications since their introduction nearly twenty years ago.

Perhaps your bearing problem can be solved by the Needle Bearing. We'll be glad to help you find out.

THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.

TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers

Trade-marks of some of the manufacturers who use Needle Bearings

AC · JOHN DEERE · MASSEY-HARRIS · OLIVER · CATERPILLAR · Ferguson · INTERNATIONAL HARVESTER · Ford · MM · OLIVER · GAS

A color to grow with!

All three of the washable play suits you see here started out in the same size, but they are expandable. By letting out tucks and cuffs, each one will last through two years of a child's growth. Each will get more than twice the sun, suds and perspiration of regular play suits. But with Du Pont vat dyes, their colors stay fresh and bright throughout their whole extended life.

This is just one example of the more durable, longer-lasting garments that are drawing manufacturers' attention to Du Pont's equally long-lasting vat dyes. These dyes include Du Pont PONSOL* and LEUCOSOL* (anthraquinone-type dyes) and SULFANTHRENE* (indigoid and related dyes). Our technical staff will be glad to work with you in your choice and application of these uniform, deep-penetrating vat colors. E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Del.

*REG. U. S. PAT. OFF.

Du Pont Dyes

DU PONT

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

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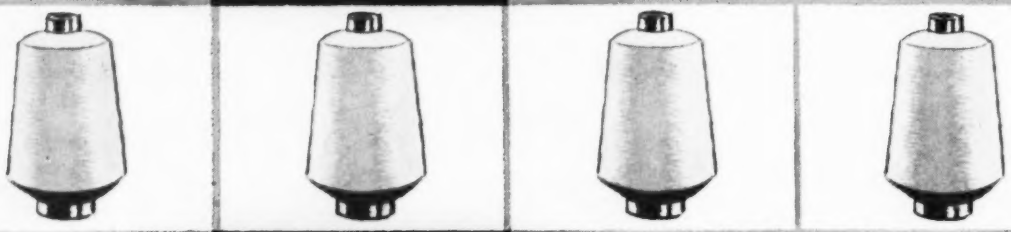
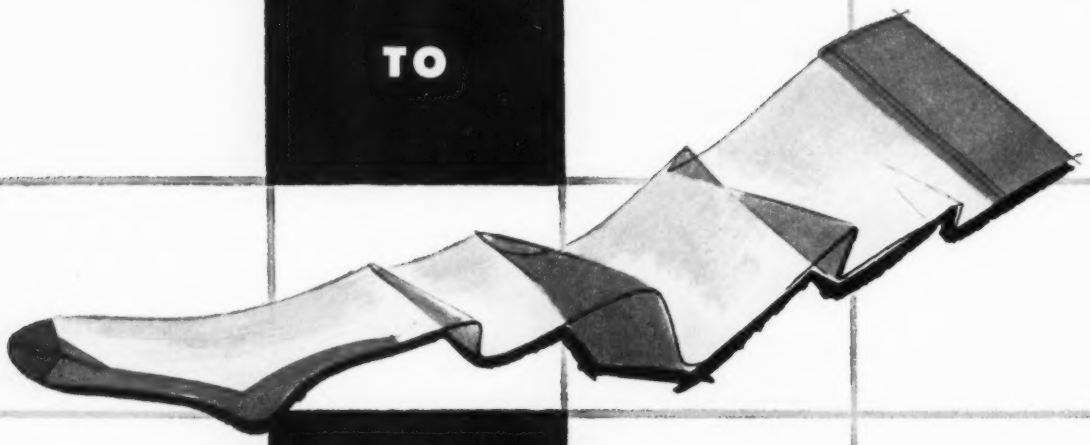
THE TRIP FROM



TO



MEANS

that if it's going to be a success, your yarn must have expert processing built right into it, which is the way Oscar Heineman has been doing it for 60 years. Six decades of producing finest quality yarns for hosiery and tricot knitting, six decades of expert throwing of silk and now nylon, dacron, orlon and other synthetic fibers, is your guarantee that at Oscar Heineman's your trip will be successful. We're always looking for the privilege of showing others *how* it can be done.

OSCAR HEINEMAN CORPORATION

Branch: Concord, N. C.

Division of Aetna Industrial Corporation

DONALD G. BREWSTER, *President and General Manager*

Processors of Nylon, Orlon, Dacron, Silk, Rayon and Other Synthetic Fibers

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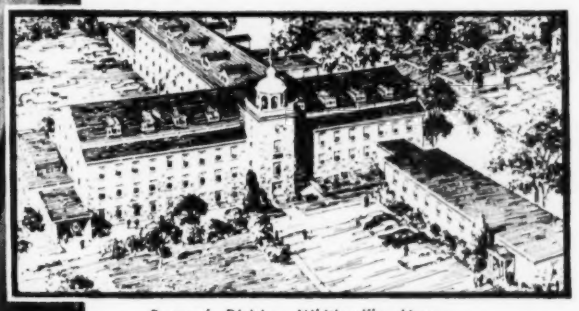
Another Dividend from our policy of PROGRESS THROUGH RESEARCH

Once again, our engineers and technicians working together in Whitin's Research Division, the world's largest and best equipped for textile machinery development, have combined their varied skills to produce a machine of outstanding merit — a great machinery dividend, this time for the tricot knitting industry.



Research Division, Whitinsville, Mass.

It's the new WHITIN Model "D" Tricot Knitter

Two of the desirable objectives of the tricot knitting industry are (1) the production of fabrics of improved quality and (2) producing such fabrics at a higher rate of speed. Extensive tests indicate that the new Model "D" achieves these purposes by providing newly designed mechanisms for the more accurate control of fabric quality — and by the use of new applications of materials for increasing its productive capacity.

Other important elements have been added or redesigned. The new motor drive, for example, is simple and ingenious, allowing a full range of precisely controlled inching and jogging through any degree of motion in a cycle. Interesting, too, is a new lubrication system which is optional for multiple unit installations.

For quality of product . . . for high production . . . for top performance, here's the pace setter — the Whitin Model "D" Tricot Knitter.

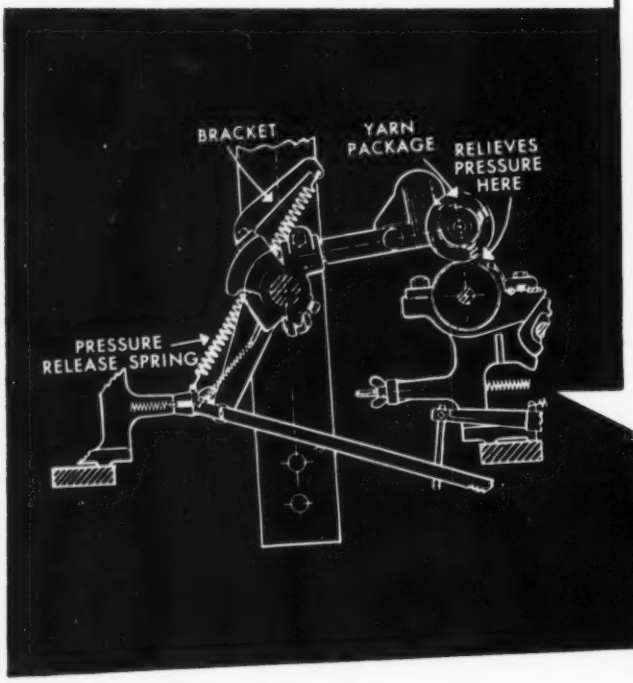
See it in operation at the
KNITTING ARTS EXHIBITION
Atlantic City Auditorium • April 27 - May 1
BOOTHS
414 • 414A • 415 • 415A • 440 • 441 • 452 • 453

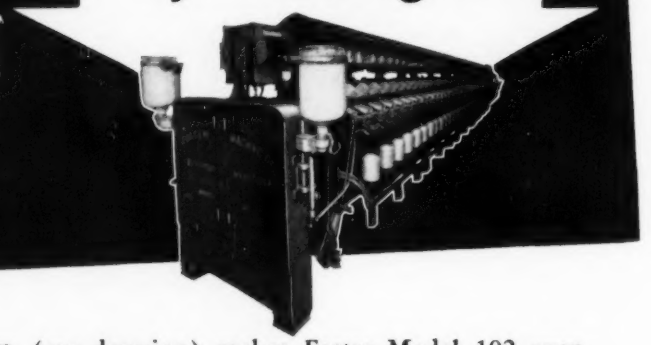
Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS
CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, N. C. • DEXTER, ME.

FOSTER MODEL 102

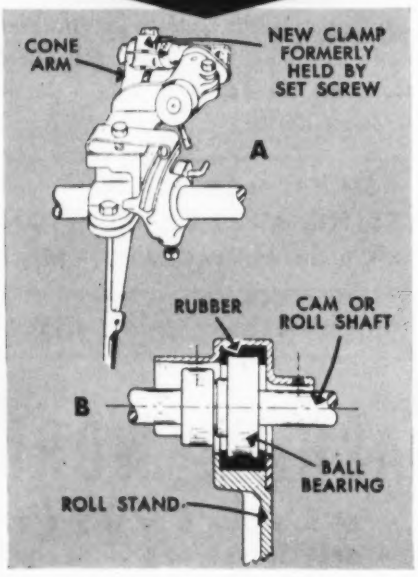
Better than Ever for Winding Dye Packages





Our new pressure release mechanism (see drawing) makes Foster Model 102 even more suitable than before for winding dye packages. As shown, this new mechanism enables you to regulate pressure of the yarn package on the driving roll — and thus to produce a very soft package, if desired. Simple, rugged and easy to adjust, the device is built around a pressure release spring whose tension may be regulated.

Also New!



Model 102 is the *flexible* winder — adapts readily for winding staple yarns of all types in a wide range of counts, doubles production and reduces operating costs 1/3 by contrast with obsolete machines. And it gets better all the time, as we develop its possibilities to meet new conditions in the textile industry.

A. Collar Assembly
to hold cone or tube spindle eliminates pitting and scoring of arm, makes accurate setting always possible.

B. Rubber Boot Assemblies
to cover ball bearings on cam and roll shafts facilitate alignment, reduce vibration — thus prolong life of machine, with less maintenance.

For Complete Data on Model 102,
Send for Bulletin A-95 No Obligation!

FOSTER MACHINE COMPANY
WESTFIELD, MASS., U.S.A.

Southern Office: Johnston Bldg., Charlotte, N. C. • *Canadian Representative:* Ross Whitehead and Co. Ltd., 1475 Mountain St., Montreal, Que. • *European Representative:* Muschamp Taylor Ltd., Ashton-Under-Lyne, Eng.

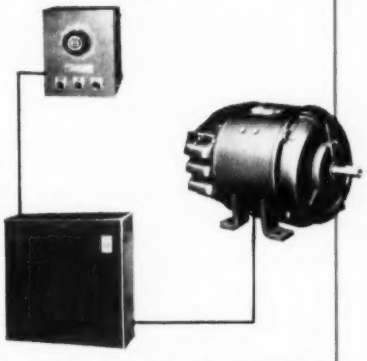
Visit Us at Knitting Arts Exhibition—Booths 28 to 30 and 35 to 37

These facts prove...

RELIANCE V★S DRIVE

will increase your production with ADJUSTABLE SPEEDS FROM A-C. CIRCUITS

The Original Packaged All-Electric, Adjustable-Speed Drive for A-c. Circuits



Conveniently packaged, factory-wired V★S Drives are available from ¾ to 300 hp. Two or more motors may be operated simultaneously from a single Control Unit.

CONVENIENT CENTRALIZED CONTROL—V★S Drive makes speed changing so easy and convenient that the most economical speed for every operation can always be used. Convenient-to-operate controls are grouped and located where your operator can easily, quickly and safely control all functions of his machine. Controls may be at the machine, or at any remote location, as desired.

STEPLESS SPEEDS—V★S Drive offers an unlimited range of stepless speeds. Operators may change to any speed while machines are running, or may pre-select any speed while machines are at rest, by merely turning the speed adjustor.

CONTROLLED ACCELERATION AND DECELERATION—V★S Drive provides positive all-electric control of torque for breakaway and for acceleration or deceleration. Speed changes may be rapid or gradual, and as frequent as desired. Shockless speed changing with V★S Drive avoids damage to delicate materials or fabrics.

QUICK, SMOOTH STARTS AND STOPS—Quick starts and stops cut lost time between operations. With V★S Drive, any load can be stopped quickly and smoothly, from either high or low speeds, through positive electrical braking that never wears out or needs adjustment.

FAST, FULLY CONTROLLED REVERSING—V★S Drive reverses almost instantly even from high speed. Frequent reversals present no problem. Reversal may be from low to high speed, or vice versa.

INCHING, JOGGING, CREEPING—V★S Drive provides inching, jogging, and creeping, for setting up, threading, positioning, or inspection. Operator can slow down a machine for inspection, then accelerate quickly and *exactly* to previous working speed.

ABSOLUTELY UNIFORM TENSION—V★S Drive maintains proper tension for roll-fed materials so that quality is unvarying throughout and all finished rolls are uniform. Succeeding operations are simplified and productivity of machines is increased. Shutdowns and rejects due to breakage of material, or fluctuations in quality, are virtually eliminated.

MULTI-MOTOR OPERATION—The V★S system makes it possible to apply power to two or more points in a machine or to operate separate sections of a machine tied together as a process. Speeds of motors can be synchronized to any desired degree.

D-1455

The Most Effective Method of Power Transmission in Industry! Write today for V★S application information and selection data. Ask for Bulletin D-2311.

RELIANCE ELECTRIC AND ENGINEERING CO.

1086 Ivanhoe Road, Cleveland 10, Ohio • *Sales Representatives in Principal Cities*

MOVE **fast** AGAINST **fire**

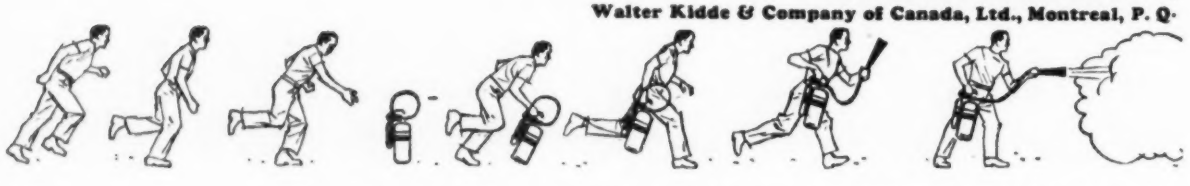
WITH A KIDDE DRY CHEMICAL EXTINGUISHER

Just pick it up, point the horn and pull the trigger. That's all it takes to put out a fire with a handy Kidde Dry Chemical Extinguisher. Pound for pound, there's no faster or more effective portable on the market. A single trigger-pull gives you instant action, while Kidde's patented Diffuser Horn spreads an enormous cloud of fire-smothering dry chemical. Anyone can beat down fire in a matter of seconds, standing behind the "cool" protective wall of dry chemical that's set up. Kidde Dry Chemical portables come in 5, 20 and 30 pounds. Better get one today.

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc. and its associated companies.

Kidde

Walter Kidde & Company, Inc.,
491 Main Street, Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

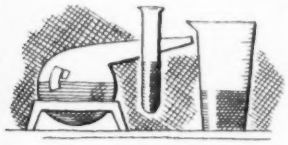


Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y.

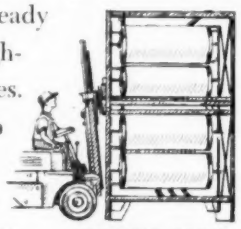
Broad Avisco Research Program Brings Continuing Benefits to Knitting Industry

A continuing program of research and development has enabled Avisco to serve the knitting industry with a number of pioneering achievements.



TEXTILE RESEARCH

Typical are the steady improvements in acetate yarns, and the methods of packaging them on tricot spools ready for use on high-speed machines. Special Avisco shipping racks provide efficient storage with maximum protection of yarn and final fabric quality.

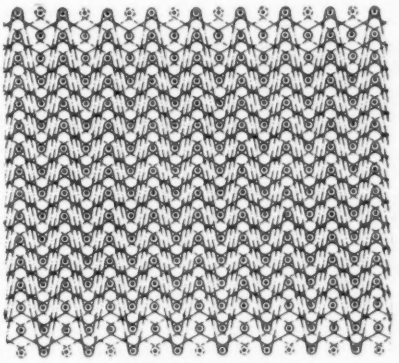


SHIPPING RACKS

Avisco filament rayon is widely used in men's sport shirts and other apparel, permitting vat-dye performance. Avisco rayon staple—one of the most useful of all modern fibers—is made to precise specifications of denier, luster, length and crimp for knitting requirements. Used alone or blended with other fibers, it is suitable for spinning into yarn by any standard spinning system.

SPORTSWEAR

Improvements in knitting machines and finishing techniques have resulted from research at Avisco's Textile Research Department, Marcus Hook, Pa., while the development of Filatex elastic yarns—latex core covered with yarns such as rayon, nylon, cotton—has brought notable advantages to quality swim suits, foundations, men's hose, and other knitted apparel.



TRICOT FABRIC DESIGN

Textile chemicals developed by Avisco have helped solve many static, lubrication, and stabilization problems. Outstanding among Avisco's chemical developments is the Avcoset process, that gives true, permanent washability to rayon, offering important new opportunity for knitted rayons. And Avisco's continuing research brings constant improvements in dyeing, finishing, and fabric development.

FINISHES

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

America's first producer of man-made fibers
RAYON ACETATE VINYON* FILATEX®

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*FMC & CCC

AMERICAN VISCOSE CORPORATION

See the **FIDELITY** exhibit at the Knitting Arts Show
Booth 274 & 275

POLO SHIRTS

GARDEN HOSE

SOCKS

BUILDING WIRE

TOQUES

AUTOMOTIVE HOSE

WHY we show wire and garden hose in a KNITTING ARTS EXHIBITION

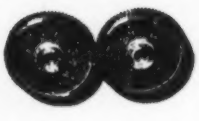
This year—in addition to exhibiting well-known textile products manufactured on Fidelity Knitters—we will also display outstanding examples of how Fidelity has long applied knitting arts to non-textile industries.

That is why you will find such things as Non-Metallic Sheathed Cable, Weatherproof Wire and Garden Hose in our textile exhibit when you visit our booths (274 & 275) at the Knitting Arts Exhibition.

Designers and Builders of Intricate, Automatic Precision Machines

FIDELITY MACHINE COMPANY, INC.

SINCE 1911



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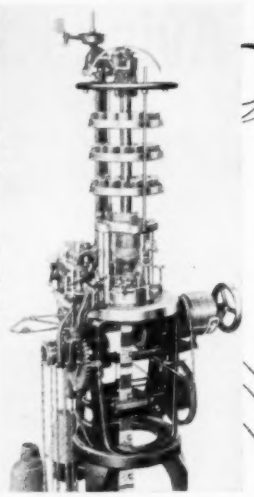
FASTER PRODUCTION
of fancy pattern **RIB**
anklets, collars and cuffs *with*



FIDELITY *Multi-Design RIBBER

VERSATILE The Multi-Design makes top quality anklet tops, collars, cuffs and trim in any style for every size. It provides 25 steps, 235 vertical wrap colors and 5 horizontal stripes. Range is 3" to 7" diameter.

FASTER Higher speeds increase the output of fancy design true Rib fabric by 25%.

PROVEN Fidelity offers the only complete line of fancy pattern Ribbers, proven in the finest mills. Their unlimited design scope assures you a profitable line year after year.

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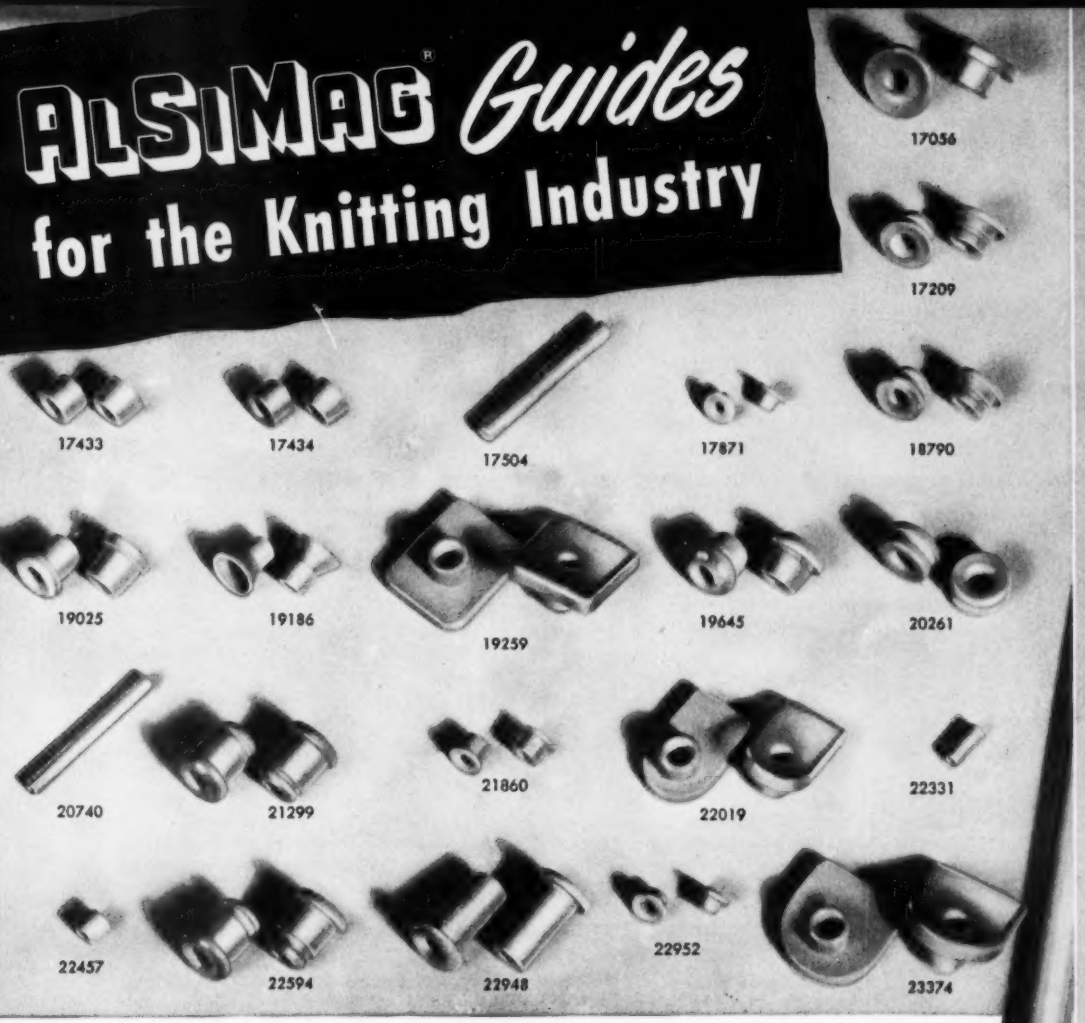
AlSiMag® Guides for the Knitting Industry



USES

- Yarn Box Eyelets
- Trough Eyelets
- Snapper Eyelets—Tapered, Shouldered, Plate, Grooved
- Oil Cup Eyelets
- Stop Motion Eyelets and Inserts
- Carrier Tubes
- Trough Rods
- Tension Rods
- Tension Rings
- Drop Wire Rings
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ADVANTAGES

1. *Quality.* Smooth, homogeneous material of great hardness. Uniform physically and dimensionally.

2. *Long Life.* Test these guides on finer denier synthetic yarns at high speed and high tensions. In every case reported to us, AlSiMag guides have shown a material improvement over any former guides used.

3. *Fewer Replacements.*

4. *Uniformity* of guides makes for uniform high quality in finished products.

5. *Lighter Tensions.* AlSiMag guides are available in controlled finishes.

6. *Electrically Conductive* guides (AlSiMag 193) are available to aid in the control of static.

TEST SAMPLES SENT ON REQUEST.

THE MOST COMPLETE SELECTION OF GUIDES EVER SHOWN FOR ALL TYPES OF KNITTING WILL BE FEATURED BY **AlSiMag**

SPACE 113

KNITTING ART EXPOSITION

April 27 thru May 1, 1953

52ND YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

SALES ENGINEERS: NORTH AND EAST: Jay S. Gosnell, 671 Broad St., Newark, N. J., Mitchell 2-8159. SOUTHEAST: Joe E. Spearman, 401 Belton St., Charlotte, N. C., 4-1525. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tenn., 5-3411.

DYNEL / *blends with woolens and worsteds to increase strength, wear, and crease retention.*

Blends of DYNEL with wool have longer useful wear-life, better crease retention when wet, greater strength, and more dimensional stability in washing than comparable all-wool fabrics. DYNEL is stronger than wool, so lighter weight yarns and fabrics can be made.

WOOLEN YARN PRODUCTION In blending with wool, DYNEL should be handled like wool, with two exceptions. Prior to woolen carding, additional lubricant should be applied to the stock, preferably with a fine spray. Secondly, dyed DYNEL stock will blend better if it is pre-picked by giving it one run through a mixing picker before blending with the remainder of the fiber.

In mill processing of DYNEL blends, finer or stronger yarns can be spun from a given wool. Furthermore, certain low-grade wools and shoddies that previously could not be spun can now be used for yarns. DYNEL blends are capable of being spun to finer counts than could be obtained from the same all-wool lots. In woolens, yarns up to 10-run have been spun with 100% DYNEL. Drafting properties are excellent. Woolen spinning frames have been run at 10% more front roll speed on a 5-run yarn containing as little as 15% DYNEL, and less ends down resulted.

WORSTED YARN PRODUCTION Proper production of DYNEL-worsted blended yarn requires observation of two guiding principles — handling the fiber to utilize fully the advantages of DYNEL's thermoplasticity and providing for sufficient fiber relaxation in spinning. DYNEL needs "room to breathe", so twist must be kept to a minimum, and an open, lofty sliver maintained during gilling, drawing and spinning.

Worsted yarns with 30% DYNEL have been spun to eight counts finer than obtainable from the all-wool stock with equal efficiency in spinning. As the percentage of DYNEL is increased, the yarn tends to become leaner for a given twist and count. 100% DYNEL yarns are considerably leaner than all-wool yarns, unless steamed. Strength from twist develops faster than with wool; when 100% DYNEL yarns are made, maximum strength is obtainable with a lower twist than needed for maximum strength of 100% wool yarns.

It is important, in making worsted-spun yarns from DYNEL, to determine the boiling water shrinkage of the yarn in addition to the usual properties of count, strength and evenness (to be sure the DYNEL has not inadvertently been stretched during the processing). Excessive stretch may result from a number of factors, including the use of too little lubricant, or non-uniform application of lubricant, too much twist, or condensing the sliver too much in gilling and drawing. The less work on the fiber, the better. Combing is not necessary and is generally not advisable. Non-uniform tensions in processing from one machine to the next, or from spindle to spindle, may also cause non-uniform results.

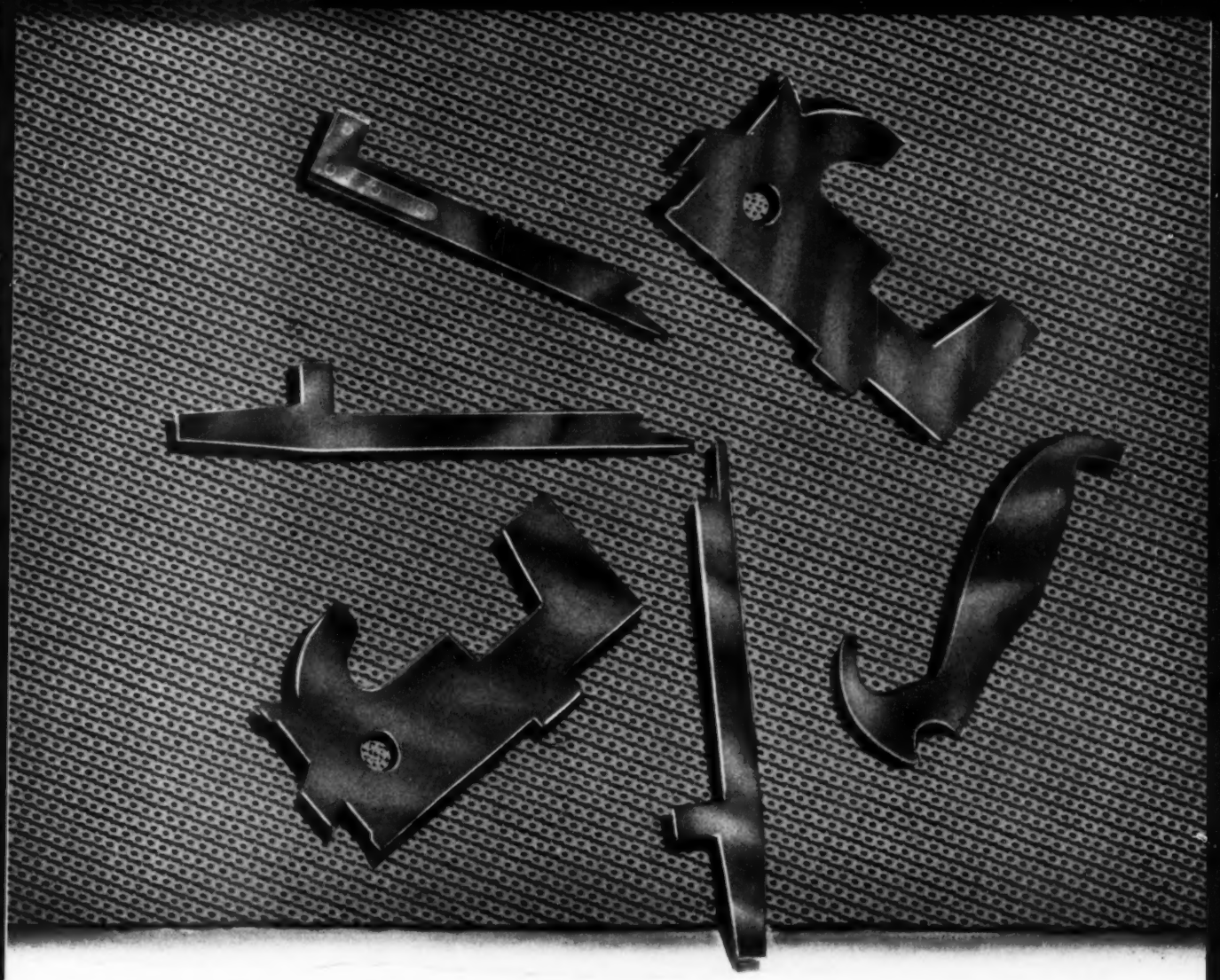
RECOMMENDED PERCENTAGE BLENDS Due to its non-felting property, the use of DYNEL in more than 10-15% blends in extremely heavy, fulled woolens is not advisable except when special heat-finishing procedures are planned. About 30% DYNEL is the top limit for medium-weight woolen flannels. In light-weight woolen goods of open construction, such as some ladies' wear suitings, higher percentages may be used.

By using the technique of fiber relaxation combined with light pressures in pressing and decating, light-weight worsted fabrics with 45% DYNEL can be finished with a hand even softer than the all-wool goods. In blends utilizing more than 45% DYNEL, there seems to be insufficient wool protection to permit handling of fabrics without stiffening during fabric finishing processes that employ high temperatures.

For complete information on DYNEL spinning, dyeing and finishing procedures, write:

Textile Fibers Department,
Carbide and Carbon Chemicals Company,
A Division of Union Carbide and Carbon Corporation UCC
30 East 42nd Street, New York 17, New York

Performance will tell... / IT'S DYNEL



TORRINGTON'S COMPLETE NEEDLE SERVICE...

covers a wide range of essential parts—

Torrington parts, like Torrington needles, are available in a complete range to meet every knitting requirement. No need to "shop around." The quality parts you want are always available at Torrington. Call our nearest office for prompt service.

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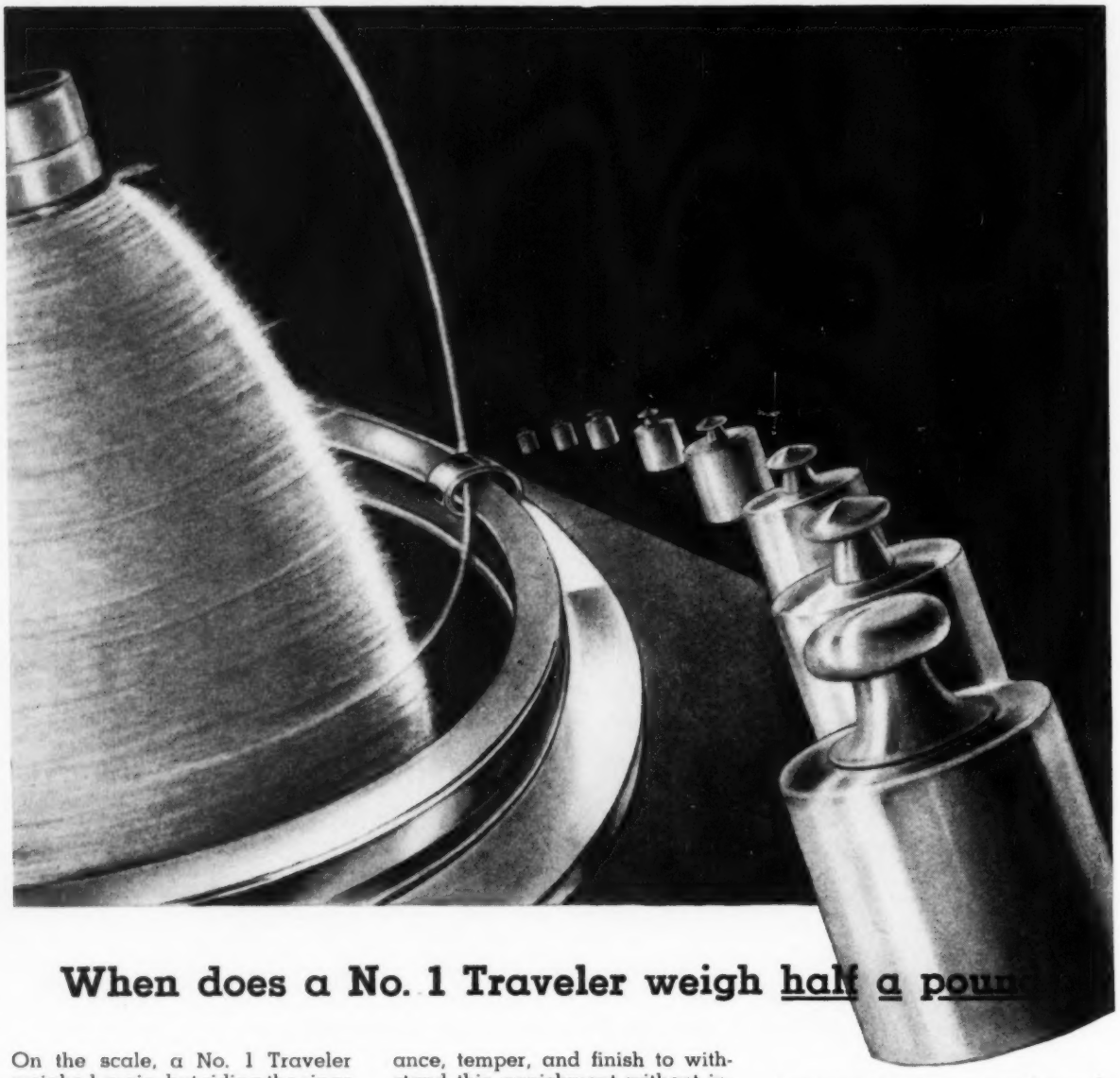

When does a No. 1 Traveler weigh half a pound?

On the scale, a No. 1 Traveler weighs 1 grain, but riding the rings at today's high speeds, it exerts an amazing "pull".

By applying simple dynamic principles to known factors, the centrifugal force can be calculated. For a No. 1 Traveler operating at 9600 r.p.m. spindle speed on a 2½" ring, this force is 3250 grains — almost half a pound!

Consider how this intensifies conditions of wear and friction. You'll see how important it is to choose travelers of the proper balance, temper, and finish to withstand this punishment without interrupting the smooth flow of yarn production.

Victor Travelers are made to serve longer — to deliver more pounds of yarn per traveler — under the toughest conditions. That's why they are first choice of economy-wise mill men for more than 10,000,000 of today's hard-working spindles.

Whether you are running conventional fibers, synthetics or blends, talk to a Victor Service Engineer about your traveler problem. Write, wire, or phone the nearest Victor office . . . for prompt service.

VICTOR RING TRAVELER COMPANY

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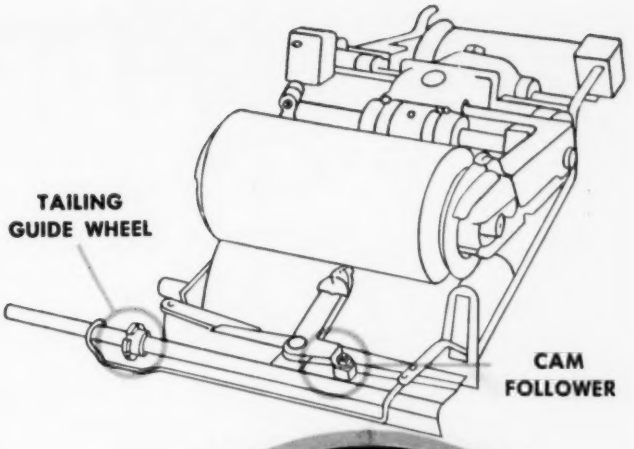
Keep a Step ahead with

VICTOR Ring Travelers

Parts molded of Du Pont NYLON on yarn uptwister

are strong, tough, wear-resistant...need no lubrication



The performance of these parts molded of Du Pont nylon plastic for the Unirail Uptwister is another example of why machinery manufacturers are turning to nylon parts for outstanding performance, low production and maintenance costs.

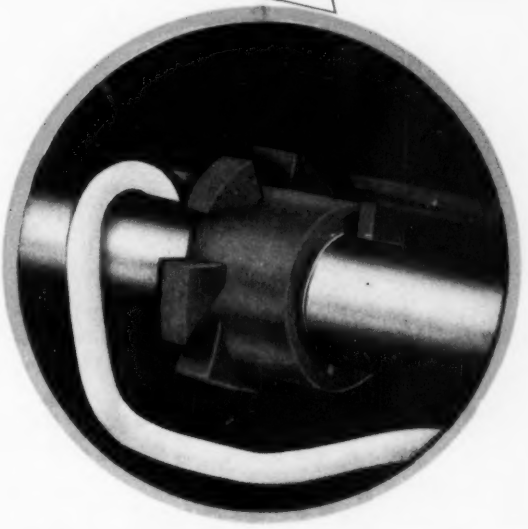
Du Pont nylon is resistant to both abrasion and impact. It is resilient . . . has low deformation under load . . . withstands continuous operation to 250°F. Nylon can be molded in thin sections and around inserts. And it has excellent bearing characteristics . . . requires little or no lubrication . . . greatly reduces danger of yarn contamination from oil or abraded particles.

Drafting parts, thread guides, verge plates, condensers and other textile machinery parts molded of Du Pont nylon have also proved efficient and economical in use.

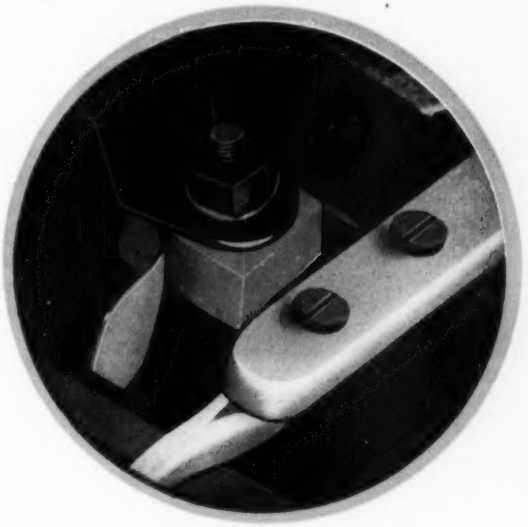
Perhaps you can profit by using parts molded of Du Pont nylon. We'll gladly furnish the names of suppliers who will assist you in developing new parts or improving present ones. For further information, write:

E. I. du Pont de Nemours & Co. (Inc.)
Polychemicals Department,
Room 184, Du Pont Building
Wilmington 98, Delaware

Parts molded for Universal Winding Co., Providence, R. I., by Standard Plastics Co., Attleboro, Mass.



TAILING GUIDE WHEEL is easily installed . . . has high wear resistance. Du Pont nylon is readily molded in this intricate shape. Its smooth surface eliminates snagging.



CAM FOLLOWER is economically molded to close tolerances with Du Pont nylon. Maintenance is minimized since this nylon part needs no lubrication.

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. . . THROUGH CHEMISTRY
Polychemicals
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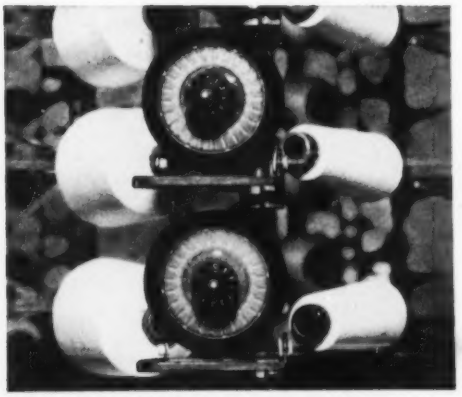
CHANGING TENSION IS EASY—a turn of the adjustment cap presets desired tension. Duplication of tension is precise.

Yarn tension kept uniform by new G-E tension brake



SMOOTH, FRICTIONLESS TORQUE—substantially constant over a wide speed range—is provided by this new G-E yarn tension brake.

Simplifies pre-setting, holds stalled tension

Textile operators can now hold constant tension on all ends . . . without scuffing—with a simple setting of the calibrated adjustment cap on the new G-E yarn tension brake.

Adaptable to many textile mill applications, the new brake eliminates scuffing and excessive flexing of delicate yarns. There's no pinch friction to abrade or fracture the yarn. Wrapping around sharp angles is kept at a minimum.

The new tension brake—while allowing easy tension settings over a range of 4 to 10 grams at speeds up to 600 yards per minute—holds stalled tension, too. The brake attempts to reverse direction of rotation after decelerating to a standstill. Torque remains in the "standstill" or "off" position.

If you are interested in accurate, constant-tension control of natural, synthetic, or glass-fiber yarns, contact your nearest G-E Apparatus Sales Office or write for Bulletin GEA-5472. General Electric Company, Schenectady 5, New York. 654-29

You can put your confidence in—

GENERAL ELECTRIC

Five Du Pont Continuous Bleaching Systems that can help lower costs

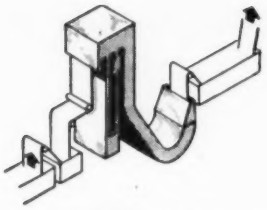
CAPACITIES FROM 500 TO 7,500 LBS./HR.

Whether your mill is large or small, there's a Du Pont system to meet your space and production requirements.

Each system assures lower over-all cost, flexibility, and ease of operation and control. Leading mills everywhere have modernized with continuous bleaching. So join the trend to better bleaching . . . investigate Du Pont Continuous Bleaching Systems. The coupon below will bring you full details. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

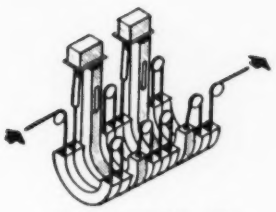
NOTE: Du Pont does not build or sell the equipment illustrated. Du Pont Systems are available from the following equipment manufacturers:

H. W. Butterworth & Sons, Phila., Pa.
Cook—P & N Machine Co., Boston, Mass.
Greenville Steel & Foundry Co., Greenville, S. C.
Rodney Hunt Machine Co., Orange, Mass.
Weisner-Ropp, Inc., Buffalo, N. Y.
Proctor & Schwartz, Inc., Philadelphia, Pa.



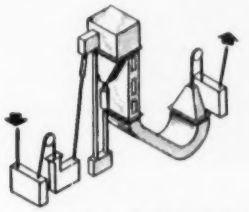
500 TO 1,000 LBS./HR.

Compact single-stage unit for the smaller plant or for specialty bleaching in larger plant. Handles cloth continuously at average rate of 75 yards per minute.



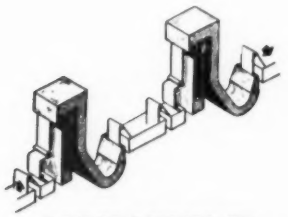
750 TO 1,500 LBS. HR.

Two-stage unit produces maximum yardage at lowest possible cost. One-man operation means savings in labor. Goods in the 3-7 yds./lb. class can be handled at 100 yds./min. speed.



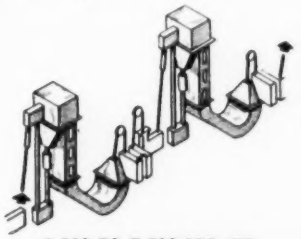
1,500 TO 3,000 LBS./HR.

Excellent arrangement for production requirements of 200,000 to 400,000 yds. weekly. Handles light and heavy constructions. Available in open-width design for goods that cannot be rope-processed.



2,000 TO 6,000 LBS./HR.

Flexible arrangement permits installation as single or two stage system. Requires only 325 to 500 sq. ft. floor space. Handles 75 to 125 yds./min. Matched units can be added to increase capacity.



3,000 TO 7,500 LBS./HR.

For large-scale bleaching of print cloths, terry toweling, colored yarn, shirting, etc. Can be designed to process up to 300 yds./min. Open-width design also available.

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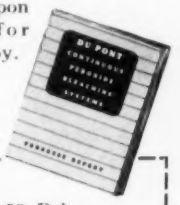
about Continuous Bleaching. It describes typical installations in leading mills and all phases of the process. Just fill out and mail the coupon below for your copy.



DU PONT CONTINUOUS PEROXIDE BLEACHING

DU PONT
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. . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Del.

Please send me more information about Du Pont Continuous Peroxide Bleaching Systems—including your free book.

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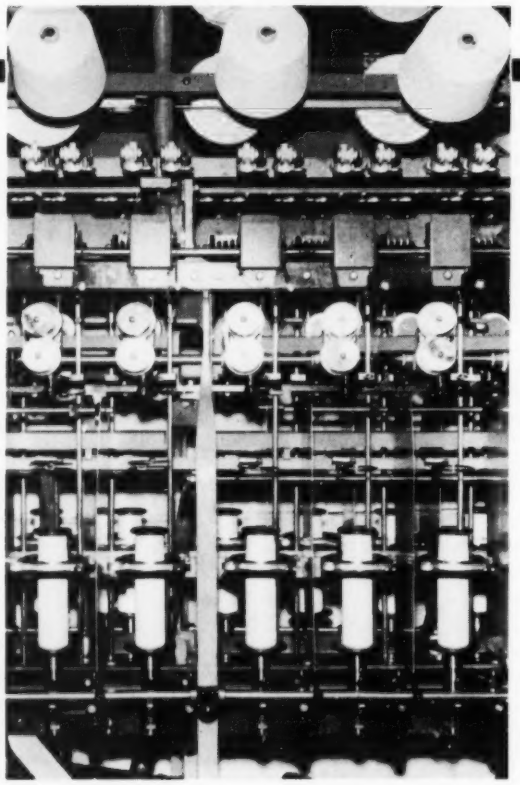

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41st Knitting Arts Exhibition
Atlantic City, New Jersey
April 27 to May 1, 1953

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In dyeing and scouring, as a detergent and for wetting and foaming action, MAPRO D LIQUID has proven itself superior to other detergents on the market and at considerably lower cost.

MAPRO D LIQUID offers faster wetting action, faster and better foaming, greater detergency and compatibility with hard water and acids, and handles far more easily than soaps and other detergents.

If the check list below offers you any advantage over your present detergent, ask for a test sample or even a mill-scale run, without obligation.

MAPRO D LIQUID

In wetting out, emulsifying and detergent operations; in scouring cotton, rayon, acetate and other yarns and piece goods; as a dyeing assistant, and as a replacement for soap in other operations.

MAPRO D LIQUID *offers:*

- Faster wetting action
- Better detergency
- Improved dispersing and suspending action
- Easier handling than soap—no cooking or boiling, instant foaming
- Compatibility with hard water, phosphoric and acetic acids
- Unusually fast and thorough rinsing
- Lower initial and in-use cost

ONYX *OIL & CHEMICAL COMPANY*

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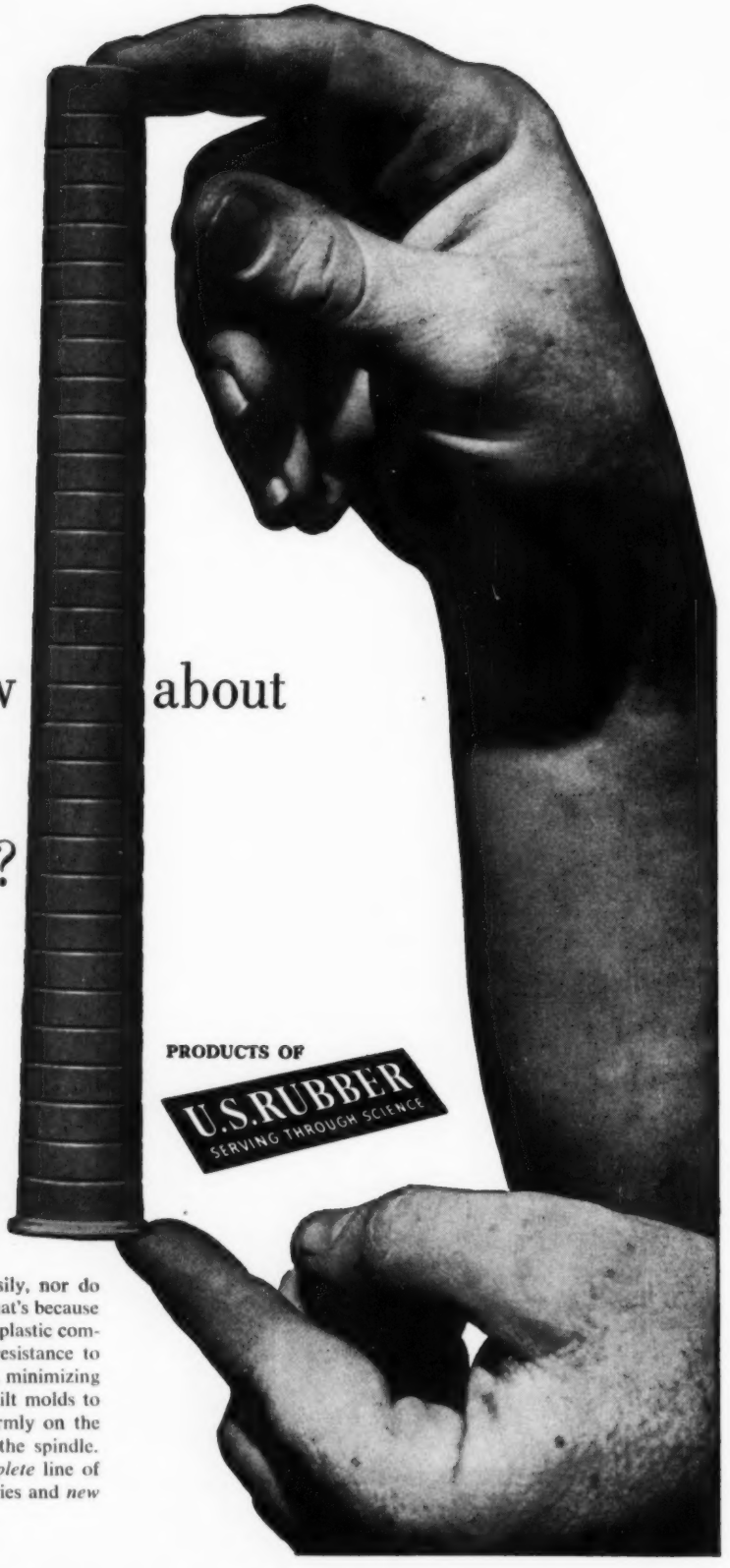
In Canada: ONYX Oil & Chemical Co., Ltd., Montreal, Toronto, St. Johns, Que. For Export: ONYX International, Jersey City 2, N. J.



What's new about U. S. Rubber's warp tubes?

First, they do not crush easily, nor do they chip, splinter or roughen around the ends. That's because they are made of Uscolite, the sensational rubber-plastic compound. Uscolite warp tubes provide maximum resistance to abuse in a thin-walled tube. They hold yarn well, minimizing sluffing. Because they are molded in precision-built molds to close tolerances, Uscolite warp tubes seat uniformly on the spindles. There is never any working down on the spindle.

United States Rubber Company makes a *complete* line of textile mill specialties, incorporating *new* economies and *new* highs in product quality. Write to address below.

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

When you need fast-wetting action, better detergency—specify

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Hundreds of processors rely on Laurel Synthetic Detergents for speedier penetrating and scouring action on all fibers and fabrics. Unusual stability . . . acid, alkali or hard water. Laurel Synthetic Detergents are available in powder or liquids. Write today for samples and recommendations.

Coning and Spinning Oils for all fibers including the latest synthetics. Anti-static features available. Penetrators. Finishes for specific applications.

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"I could see the corpsman kneeling over me. The blood plasma was running down through a tube into my arm and he said everything was going to be O.K. I was walking across an enemy mine field in Seoul when one exploded and a piece of shrapnel caught me in the leg.

" 'Got enough of that stuff?' I asked him, pointing to the blood. 'I guess we never have enough,' he said, 'but you can thank *somebody* for this pint.'

"How do you thank 'somebody' for blood? For saving your life? When I got back home, I discovered the answer at my local blood donor center. There's only *one* way to say thanks—by giving some of your own blood."

"How do you thank 'somebody' for Blood?"

Yes, all kinds of people give blood—for all kinds of reasons. But whatever *your* reason for giving blood, this you can be sure of: Whether your blood goes to a combat area, a local hospital, or for Civil Defense needs—this priceless, painless gift will some day save an American life!

Business Executives!
✓Check These Questions!

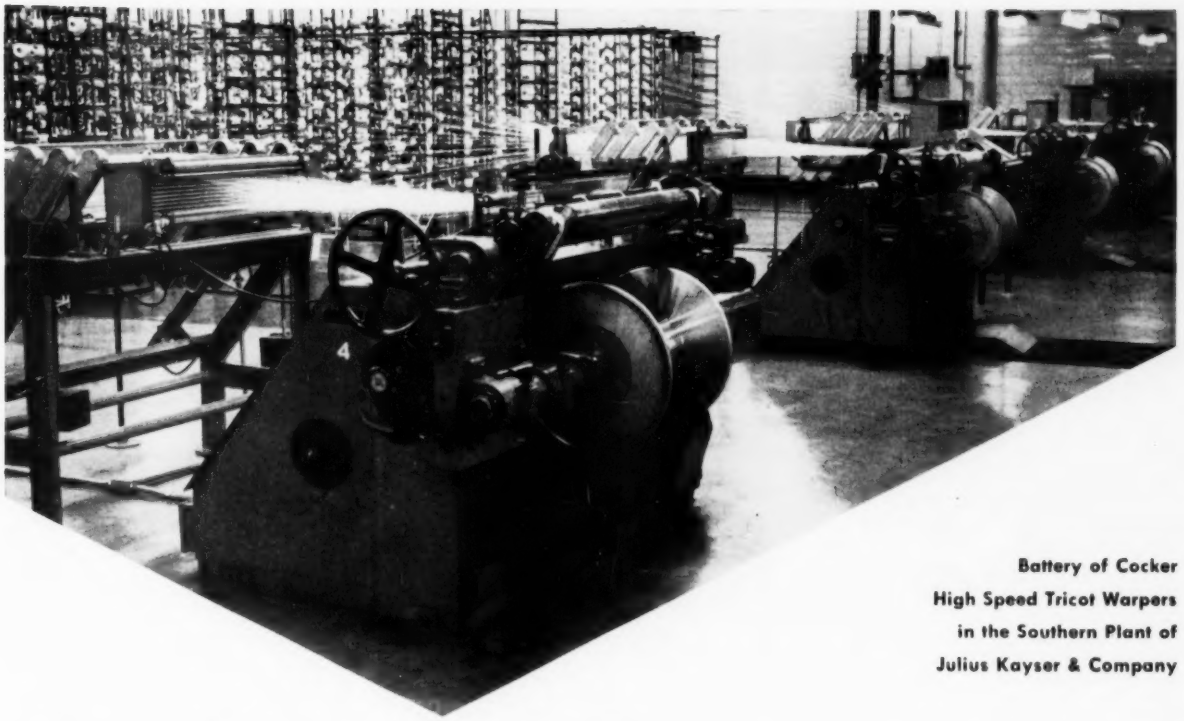
If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ☐ Have you given your employees time off to make blood donations?
- ☐ Do you have a Blood Donor Honor Roll in your company?
- ☐ Have you set up a list of volunteers so that efficient plans can be made for scheduling donors?
- ☐ Have you arranged to have a Bloodmobile make regular visits?
- ☐ Has your management endorsed the local Blood Donor Program?
- ☐ Have you informed employees of your company's plan of co-operation?
- ☐ Was this information given through Plant Bulletin or House Magazine?
- ☐ Has your company given any recognition to donors?
- ☐ Have you conducted a Donor Pledge Campaign in your company?

Remember, as long as a *single* pint of blood may mean the difference between life and death for *any* American . . . the need for blood is *urgent!*

Give Blood Now—Call Your Red Cross Today!

National Blood Program



Battery of Cocker
High Speed Tricot Warpers
in the Southern Plant of
Julius Kayser & Company

The Cocker High Speed Tricot Warper

This illustration shows a battery of Cocker High Speed Tricot Warpers for handling beams 21" x 21". . . with Magazine Cone Creel and Electric Eyeboard Stop Motion. These machines can also be built to handle beams 42" between flanges, with 21" diameter flanges.

These warpers are of extra heavy construction with simple and efficient beam doffing, variable speed D. C. drive, with presser roll located back of the beam . . . out of the way of the operator. Included on this equipment is the electronic relay stop motion patented by Deering, Milliken Research Trust, and manufactured by Cocker . . . the most sensitive and efficient stop motion on the market.

New
New
New

The new Cocker High Speed Tricot Warper now includes new design for air operated Presser Rolls and air operated doffing arrangement; and Magazine Cone Creel with new type Adjustable Tension.

See it in Operation

We invite you to the first showing of this new equipment. Visit our Booth 52 AA at the Knitting Arts Exhibition, Atlantic City, this April, to see it in operation.

THE LEADER
COCKER
AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

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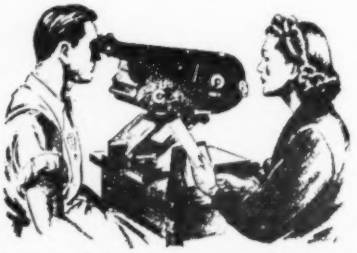
Suppose *you* had to put in a day . . . or the rest of your life . . . as a machine operator in your mill. You'd find that your earnings . . . and those of your company . . . would depend on your aptitude for the job you were trying to do. One of the most important factors in your job-skill would be measurable in your *visual skills*.



LET US GIVE YOU AN ORTHO-RATER TEST

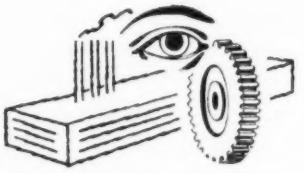
We'll be set up for the Knitting Arts Exhibition at the Atlantic City Auditorium in Booth 416 with Bausch & Lomb Ortho-Raters. It will take you about four minutes to have your visual skills "Ortho-Rated." You'll find it interesting—and you'll learn what kind of jobs your eyes are good for.

But more importantly, you'll see what a simple procedure it is, how easily it could be installed in your mill. And you'll marvel that its results can be so far-reaching in increasing production . . . lowering cost . . . improving quality . . . reducing accidents, training time and labor turn-over . . . in improving employee relations.

A PRODUCTION ADVANTAGE FOR YOUR MILL

The Bausch & Lomb Occupational Vision Service—including the Ortho-Rater, the vision measuring instrument which is the heart of the program—is now available for outright purchase. It equips you with a scientific method for identifying the 41% of workers (the industry-wide average) who may be responsible for most of your production troubles. It shows you how to rehabilitate these workers, how to select and place new employees.

We'd like to show you some of the amazing results of the Occupational Vision Service in textile plants over the past ten years—results which give those mills an immense competitive advantage in production, cost and quality. Visit our booth at the Knitting Arts Exhibition, or write: Bausch & Lomb Optical Co., 95116 Smith St., Rochester 2, N. Y.



BOOTH 416
Knitting Arts Exhibition
APRIL 27–MAY 1
Atlantic City Auditorium

BAUSCH & LOMB

Occupational Vision Service

1853 1953 INTO A NEW CENTURY OF OPTICAL PROGRESS
BAUSCH & LOMB CENTENNIAL

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Tomorrow's customer . . . your customer, may still remember the ironing board. But chances are, she'll have little use for one.

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Du Pont "modern-living" fibers make it possible for you to offer fabrics in exciting new textures and colors . . . fabrics that wash easily, dry quickly, hold their shape, stay crisp and pretty longer.

When you create fabrics, consider the Du Pont "modern-living" fibers—take advantage of Du Pont's long experience and more extensive research on fibers and fabrics—rely on Du Pont to help you produce fabrics that satisfy . . . fabrics that sell.

DU PONT

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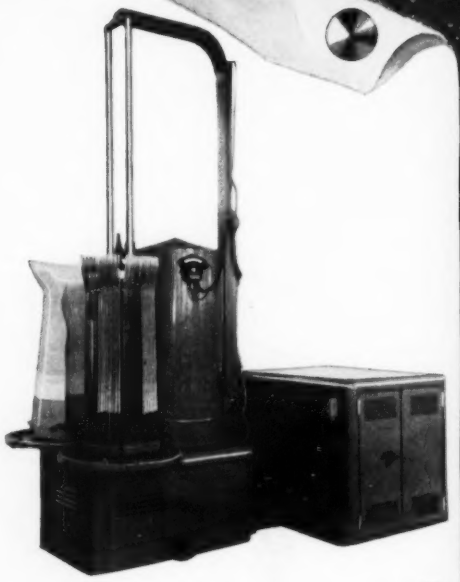
Reason No. 1

THE ALL NEW PROCTOR PREBOARDING MACHINE

Never before has any one preboarding machine offered all of the advantages that are combined in this new Proctor two operator machine. These are some that will make this the most profitable investment in preboarding equipment that it is possible to make . . . an output up to 46 dozen pairs per hour . . . compact design (occupies a floor area only 5′ wide by 9′4″ long) . . . substantial steam savings . . . stockings are completely dry when stripped. See this machine demonstrated.



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Especially well suited to use with tubular knit fabrics this new Proctor washer offers many advantages over conventional slack washers. A completely operative scale model will be on display to show convincingly the efficiency of this new Proctor machine. See it—and learn how the basic principle can be adapted to your requirements for washing or other wet processing.

Reason No. 4

REDMANIZED* FABRIC DATA

Up-to-the-minute information on the fastest moving development in the knit goods industry—REDMANIZED* Shrunk-to-fit fabrics. See the story of these modern fabrics in sound, color film—and learn the latest information on the equipment required for producing them and getting aboard the profit-train that is heading straight for record breaking sales.

Reg. U. S. Pat. Off.

BOOTH NUMBERS 188-193

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Atlantic City Auditorium, April 27 to May 1

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Editorial Articles
and the Advertisements

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. . . to send a Kink, a letter for Round Table, or a news note.

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Dear Editor: This Card Expires June 30, 1953

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. APRIL, 1953

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. APRIL, 1953

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for April are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Stainless-steel washers for scouring, bleaching, and acidifying operations for all fibers and all systems are featured in a folder put out by C. G. Sargent's Sons Corp. The washers have 60° sides and a ball-bearing suspended-rake design. Several installations in continuous ranges are shown. **(F-1)**

A Superloop jersey knitting machine, Model 4SADHS2, is described in a bulletin from Mellor Bromley & Co. Ltd. The machine is said to offer the high production of a latch-needle machine with the quality of a spring-needle fabric. An electromatic needle-detector stop motion and automatic lubricator are new patented features. **(F-2)**

A raschel knitting machine is described in a bulletin from Robert Reiner, Inc. Knitting widths of 100 and 112 in., up to 8 guide bars, and one or two needle bars are features; and provisions are made for chain automat, stitch comb, crepe attachment, chopper plate, rubber-yarn feeder, and plush plates. **(F-3)**

Dyeing and finishing machinery has been cataloged by The Hinnekens Machine Co., Inc. The complete range of machinery is separately described with accessories—rolling-up machine, calender, continuous boil-off, dye becks, embossing machine, jig, padder, scray, tentering machine, moiré machinery, etc. **(F-4)**

A pin drawing frame and a pin roving frame are described in two bulletins from Stellite American Corp. The drawing frame has one or two heads, one to four cans per head, and 60 fallers per head and makes 350 to 400 gr.-per-yd. sliver. The rover has up to 84 spindles, 10x5-in. bobbins, break draft of 1 to 2, and total draft of 5 to 17. **(F-5)**

A traverse wheel grinder, No. 120, is described in a folder put out by Dronsfield Brothers Ltd. A patented differential motion gives a traverse speed of 150 in. per min. for grinding cylinders and doffers, and 300 in. per min. for grinding flats. The information required for an order is given. **(F-6)**

An automatic reed- and heddle-brushing machine is described in a folder prepared by Sam. Vollenweider Ltd. The machine comes in three sizes for 55-, 75-, and 85-in. reeds. The change from reed brushing to heddle brushing is simple. Pictures of a reed before and after cleaning show the effectiveness of the machine. **(F-7)**

AUXILIARY EQUIPMENT

Productimeters are described in a catalog prepared by Durant Mfg. Co. Stroke counters, rotary counters, lineal counters, predetermined counters, tachometers, and a variety of other counters are separately treated. A special textile-counters catalog is offered. **(F-8)**

Drill presses are described in a catalog issued by South Bend Lathe Works. A variety of drill presses is described, but the one of most interest to textile mills is the 14-in. economy model, which comes on a bench or floor stand. The drill press has a maximum size of ½ in. **(F-9)**

An electronic level control with no moving parts or diaphragm to get out of control is described in a brochure put out by Robertshaw-Fulton Controls Co. The device controls valves, motor starters, timers, etc., for size level or almost any liquid or solid. **(F-10)**

The Arealometer, Fibrograph, and a comparison balance are described in bulletins made available by Special Instruments Laboratory, Inc. These instruments are used in fiber-testing laboratories to weigh the sample of fiber, determine the fiber fineness, and get an index of variation. **(F-11)**

A pH meter that works for 2,000 hr. from three radio batteries is described in a bulletin from Photovolt Corp. The instrument sells for $145 and has an accuracy of 0.03 pH. **(F-12)**

A pneumatic controller for rate of flow, differential pressure, liquid level, viscosity, pressure, or temperature control is described in a bulletin from Fischer & Porter Co. The controller has single- or dual-instrument, point-of-measurement mounting. **(F-13)**

A pH-metering system for continuous measuring and controlling the pH of processing and stream pollution is discussed in a bulletin from Minneapolis-Honeywell Regulator Co. The instrument has a complete Electrometer system in one unit. **(F-14)**

A self-contained, visual tachometer is described in a bulletin put out by Boulin Instrument Corp. Thirty spindles can

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Reader Service (Continued)

be checked in one visual sweep. The Visutac is the lowest priced of the stroboscopic tachometers offered by this company. **(F-15)**

Static control in the textile industry is discussed in a pamphlet prepared by The John Hewson Co. Present control methods are summarized, and the diffuse-discharge method is described. The material is bombarded with positive and negative ions to neutralize the static electricity. **(F-16)**

A direct-reading grain-unit scale is described in a bulletin prepared by Toledo Scale Co. One-half grain variations are detected on the chart, which has 350 one-grain graduations. The scale's beam has six 100-grain notches. **(F-17)**

A permeometer for testing the air permeability of fabrics is one of the testing instruments offered in a catalog prepared by Gurley Engineering Instruments. Also described is an automatic timing attachment for the test. **(F-18)**

An antistatic bar attachment for textile equipment is described in a bulletin from The Simco Co. The bar is applicable to slashers, draw frames, warpers, cards, roving frames, and other textile equipment. The cost is said to be the lowest in the field. **(F-19)**

Electronic humidity controls are described in a bulletin put out by Barber-Colman Co. Weave-room, twister-room, and cloth-room installations are shown. The control has a 0.5% adjustment and is applicable to any type spray-head or centrifugal humidifying system. **(F-20)**

SUPPLIES AND CHEMICALS

Synthetic methanol, a dye solvent, cleaner, and antifreeze, is discussed in a booklet prepared by Commercial Solvents Corp. Chemical and physical properties are summarized; handling and health problems are discussed; and tables of important characteristics are given. **(F-21)**

Fatty acids are discussed in a booklet put out by Association of American Soap & Glycerine Producers, Inc. Production methods are described, as well as methods of handling and advantages over whole oil. Terms and tests used to specify the acids are explained. **(F-22)**

Formic acid is discussed in a booklet prepared by Heyden Chemical Corp. Recent research on the use of formic acid in the textile field is included. Two textile uses are the continuous dyeing of nylon fabrics and the raising of a wool pile in wool-and-cellulose combination fabrics. **(F-23)**

Polyvinyl methyl ether is discussed in a booklet made available by General Aniline & Film Corp. The properties of the chemical suggest uses in the textile industry. **(F-24).**

Surface-active agents made by varying the polyhydric alcohols and fatty acids are discussed in a bulletin from Glyco Products Co., Inc. The chemical structure and physical properties are described and the uses in the textile industry are given. **(F-25)**

Acid- and alkali-resisting coating is described in a bulletin from Barreled Sunlight Paint Co. A list of corrosives resisted by the coating are given, and color panels of the coating are included. **(F-26)**

An odorless dampcoat finish that is recommended for shower rooms and kitchens is described in a bulletin from The Wilbur & Williams Co. The finish resists mild acids and strong cleansers and is quick drying. It is supplied in gloss or flat, white or six deep tones. **(F-27)**

Protective coatings for metal, masonry, and wood are the subject of a bulletin from David E. Long Corp. The features of the bulletin are a chemical-resistance chart and products-description table. **(F-28)**

Lacing for conveyor belts is described in a bulletin from Flexible Steel Lacing

Millions of users agree—
you cut more pipe with less work with RIDGID
Heavy-Duty Cutters

There's a big difference in pipe cutters—and you're sure of it the first time you slap a RIDGID on a pipe (any kind) and see how easily cleanly it rolls through the metal. Beautifully balanced for easy action. Factory tested for perfect tracking—and guaranteed warp-proof housings of special malleable hold it. High alloy thin-blade or heavy-duty cutter wheels that leave practically no burr. You cut pipe fast with least effort. Ask your Supply House for the more-for-your-money RIDGID.

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RIDGID
Work-Saver Pipe Tools

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MOBILIFT *Stand-Up* type Fork Lift Trucks *Stand Out* for efficient, low-cost materials handling in warehouses, terminals and plants because they get more work done faster.

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Reader Service (Continued)

Co. The lacing is made in lengths to fit all 12 sizes of belts. The lacing is particularly suitable for flat conveyors. **(F-29)**

Plasticizers are discussed in a bulletin made available by Dow Chemical Co. The bulletin gives the sales specifications, typical properties, compatibility, and solubility. **(F-30).**

ENGINEERING AND MAINTENANCE

"Threaded Fasteners for the Textile Industry" is the title of a bulletin from Standard Pressed Steel Co. Square-head and self-locking socket setscrews, socket-head cap and button-head socket screws are described, as well as self-locking nuts. **(F-31)**

An oilless ball-bearing comb box is the subject of a bulletin from Odom Machine Mfg. Corp. The comb box is made for all standard cotton and woolen cards, either right or left handed. Standard replaceable parts are available. The comb box has a self-aligning tail stand. **(F-32)**

Air-conditioning and cleaning systems are discussed in a booklet prepared by Parks-Cramer Co. The systems are described in detail in separate sections with installation pictures; accessories are also described. **(F-33)**

Pump installation and maintenance are discussed in a bulletin from Warren Steam Pump Co., Inc. Also included are tables of value to operating engineers, such as one on the properties of superheated steam. **(F-34)**

Shaft-mounted speed reducers are the subject of a bulletin from The American Pulley Co. The bulletin gives dimensions, how and where used, and how to select the correct unit for a given application. A series of 20-to-1-ratio units is featured. **(F-35)**

Disk brakes are described in a bulletin from Goodyear Tire & Rubber Co., Inc. The brakes can be adapted to almost any machine. The bulletin lists the advantages of using single-disk brakes. **(F-36)**

A deaerating heater for smaller boiler plants is described in a brochure from Graver Water Conditioning Co. The heater is guaranteed to reduce oxygen in the heated water to 0.005 ml. per liter. The heater is equipped with overflow control, thermometers, relief valve, and vent valve. **(F-37)**

Exidust, a central vacuum-cleaning system, is described in a bulletin made available by Lamson Corp. A flexible hose and attachment is used to pick up waste, and a piping system carries the waste to central collectors. Engineering data is included in the bulletin. **(F-38)**

General-purpose centrifugal pumps are the subject of a bulletin prepared by Ingersoll-Rand Co. The pumps are cradle mounted and have capacities of 5 to 2,400 gal. per min. and pressure heads of 10 to 500 ft. Dimensions and design modifications are given. **(F-39)**

The textile literature available from Westinghouse Electric Corp. has been listed in a bulletin. Most of these booklets have been made available in this department, but this bulletin makes a good checklist to see if you missed any. **(F-40)**

Totally enclosed explosionproof motors that are recommended for dusty, damp, or dangerous locations such as on wet-process equipment are described in a bulletin from U. S. Electrical Motors, Inc. **(F-41)**

Turret trucks for material-handling jobs that do not require lifting are the subject of a bulletin prepared by Hyster Co. Five models are available for moving material on pallets, skids, platforms, or boxes. **(F-42)**

Axial fans with adjustable blades for industrial applications are featured in a bulletin from Joy Mfg. Co. Fans are available in 19 housing diameters, 4 hub sizes, and 5 motor speeds. Axial fans are

HUNTER *equipment*

safeguards quality at Milliken

Milliken fabrics are favored by leading designers who demand the finest materials as background for quality garments. To safeguard its excellent reputation Deering Milliken & Co. maintains constant quality control throughout its entire operation.

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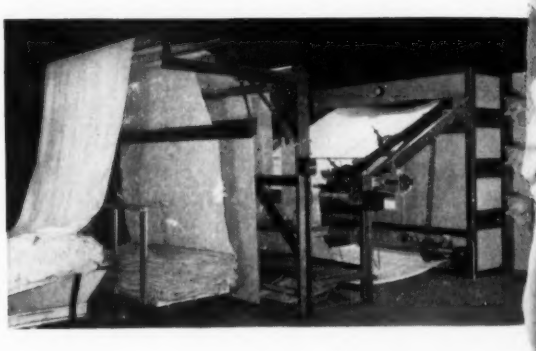

The unique Hunter High Speed Uniform Tenter Dryers produce more yardage, on a wide variety of fabrics, at lower steam, labor and power costs. Deering Milliken and other leading mills everywhere use these efficient pin tentering units for faster, more uniform drying. Send for BULLETIN UTD.

plus production
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HEADLESS PACKAGES IN SEVERAL TYPES OF ALL BAKELITE CONSTRUCTION.

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PROVED BY MORE THAN THREE YEARS OF MILL OPERATION

These Mack bakelite bobbins with molded bakelite barrels and aluminum flanges have been proven in more than three years of mill operation. Despite deliberate attempts to crush the barrels by excessive tension and extreme temperatures, not one of these Mack Bobbins has failed in service. Made with transfer tail tie feature as shown, or as conventional takeup bobbins. Tested for dimensional accuracy, concentricity and strength, these bobbins mean low cost in the long run. Consult Allentown Bobbin Works today for information on bobbins that fit your specific need.

ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA

KNITTING ARTS SHOW BOOTH 72

Reader Service (Continued)

said to be lighter and to require less space than centrifugal fans. **(P-43)**

Grommet V-belts are described in a bulletin from Allis-Chalmers Mfg. Co. The grommet belt is said to be the only belt without a splice construction and is said to last 20 to 50% longer. **(P-44)**

A rust-inhibiting paint is described in literature made available by L. Sonneborn Sons, Inc. The rusty surface is wire brushed, and the paint goes right on with no chipping necessary. The paint is said to outlast red lead and to be cheaper. **(P-45)**

GENERAL

"Plant Layout" is a sample unit from the cost-reduction training program of Wheeler Associates, Inc. The principles of good layout are given, and a check-list for you to evaluate your existing layout is provided. **(P-46)**

"Pack to Attract" is the title of a booklet prepared by The Hinde & Dauch Paper Co. The booklet puts emphasis on product promotion rather than just product protection. **(P-47)**

"The Romance of Rags" is the story of the textile-waste-materials industry that has been made available by S. Schapiro & Sons, Inc. The booklet gives pointers for getting the most out of your waste. **(P-48)**

Draper Corp. features its plant, its product, its people, and the town of Hopedale, Mass., in a booklet prepared to acquaint you with its operations. **(P-49)**

"Welcome to Whitin" is the title of a pamphlet made available by Whitin Machine Works. A list of officers and department heads is included, but the feature is a helpful map of the immediate district. **(P-50)**

Round Table

(*Continued from page 135*)

of yarn strength we might average the yarn strengths of five bobbins. For a chart of drawing size for a particular frame, we might average the size of the four deliveries.

The $\bar{X}$-Chart control limits take into account the normal variation of the particular average and the number of samples included in the average. The accuracy increases as the sample size increases, because each sample is only an estimate of the product being tested. Thus the limits on an $\bar{X}$-Chart are wider for sample sizes of five bobbins than they would be for 16 bobbins; so the problem of the batch being represented by the samples is taken into account. If the samples are taken randomly, an "out-of-control" point on the chart represents an "out-of-control" process.

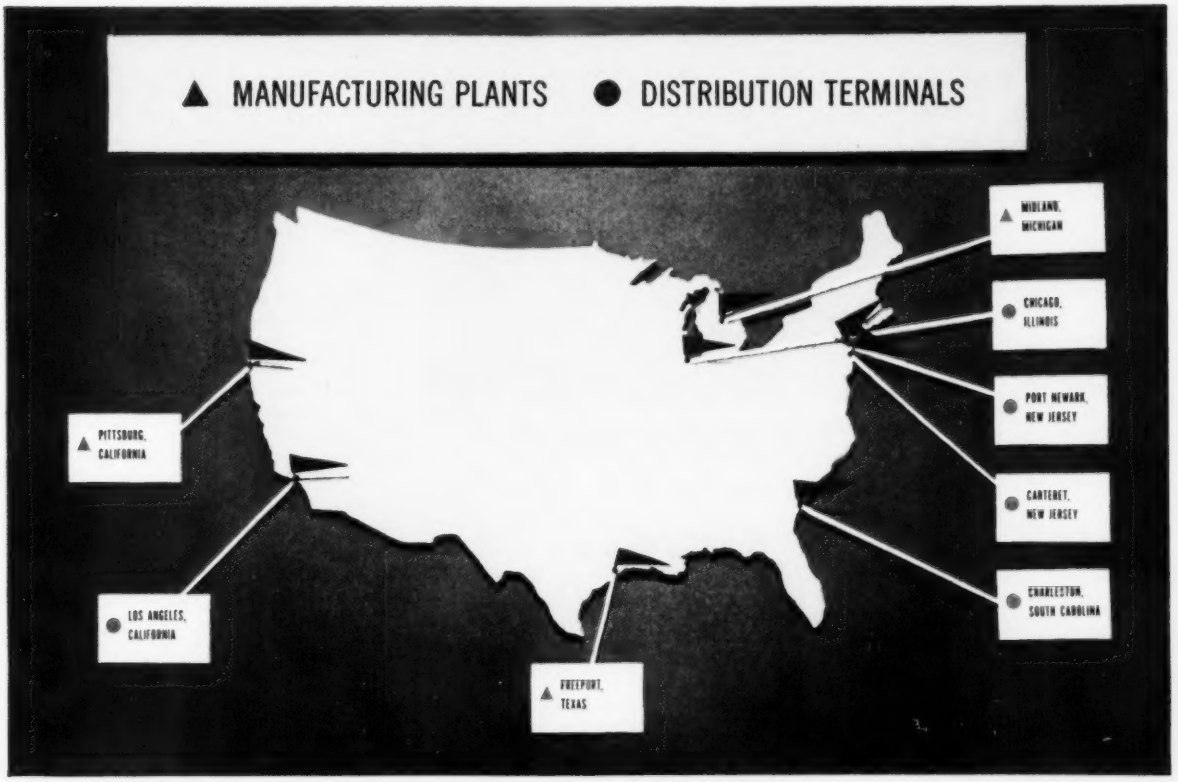
EDWARD S. RUDNICK
Wamsutta Mills
New Bedford, Mass.

PROFESSOR LOWE PRAISES LOWELL

[The following letter was perhaps the last business correspondence of John C. Lowe. Prof. Lowe suffered a shock and died shortly after this letter was written. This letter is being published because of the credit it reflects upon him and as a tribute

DIVERSIFIED DISTRIBUTION IS DOW'S KEY TO DEPENDABLE CAUSTIC SODA DELIVERY

Strategically located manufacturing plants and shipping terminals provide fast, efficient, nation-wide service



As a user of caustic soda, you are particularly concerned with prompt, dependable delivery, for it means that your production schedules can be maintained. In order to serve you in the best possible manner, Dow has created a diversified caustic soda distribution network—*a network that can serve all industries throughout the country from a minimum of two shipping points.*

Your company can greatly benefit by Dow's distribution system. With three manufacturing plants, which also serve as shipping centers, and five additional distribution terminals, Dow can serve your requirements fast and efficiently wherever you are.

Dow's rigid quality control assures you of uniform, high quality caustic soda at all times. Whether you use caustic soda solution, solid, flake or ground flake, you can be certain that the modern containers are designed to maintain the high quality of the caustic soda and are safe and convenient to use.

The next time you order caustic soda, be sure to call on Dow and take advantage of the many distribution and production benefits.

Write Dow today for the Caustic Soda Handbook. You will find it a valuable addition to your files. THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

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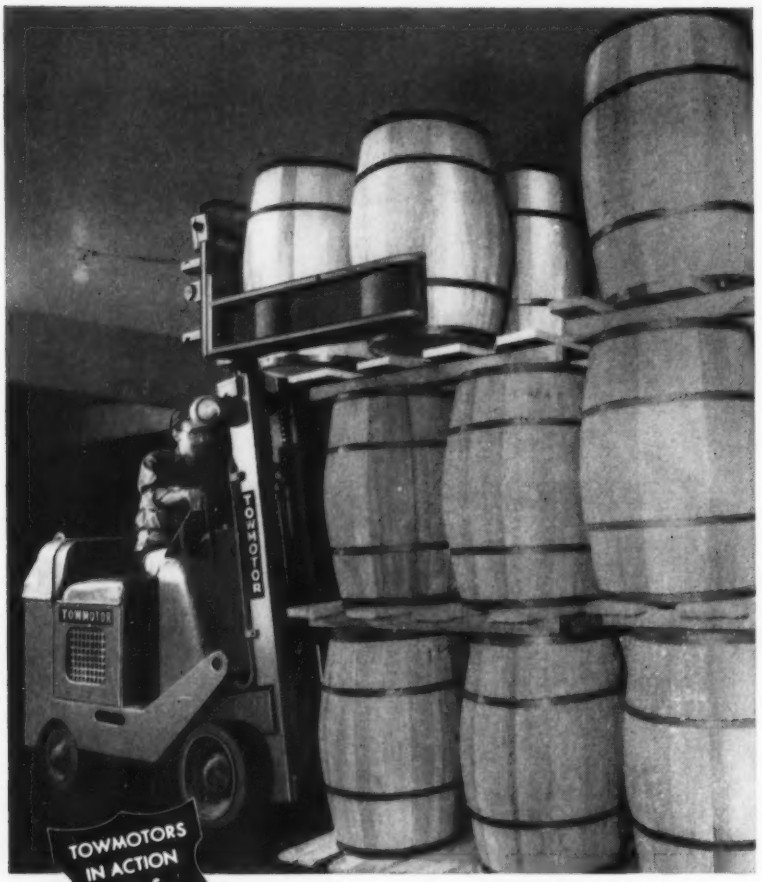

Triple-tier stacking of a 2,088-pound load of heavy chemicals at Westvaco Chemical Division, Carteret, N. J.

Tuck 'em in snug...

Stretch both storage capacity and your operating budget . . . by stacking extra-large loads extra tiers higher. That's just one of many ways that widely adaptable Towmotor takes the hobbles off your materials handling routines for greater efficiency. Any one alone totals up savings that pay for Towmotor many times over. Methods which make these savings a reality are described in a new book titled "Man-Hour Thieves." Write for your copy, and name of your nearest Towmotor Representative, to: Towmotor Corporation, Div. 2204, 1226 E. 152nd Street, Cleveland 10, Ohio.

Be sure to see the Towmotor Exhibit at the 5th National Materials Handling Exposition starting May 18, 1953

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FORK LIFT TRUCKS and TRACTORS
SINCE 1919
TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

to him. His nimble brain will be missed in the textile industry.—Editor.]

Dear Editor:

The letter from Michael J. Koroskys in your September issue was a surprise to me, and you may be interested in some additional facts about my experience with short-circuit systems of worsted manufacture.

I began my experiments in 1922. In 1924 I visited many worsted mills, but my theories were scoffed at because I was a college professor. Over a quarter of a million dollars was wasted by mills that disregarded the factor of uncontrolled distance in gilling.

It is heartening indeed to see some of these theories being applied now. I want Lowell Textile Institute to have the credit for development of the short-circuit system and for the theories of gilling that I proposed while on the staff at the Institute.

And TEXTILE WORLD deserves some of the credit also, because it has recorded more practical articles on my theories than has any other textile publication.

JOHN C. LOWE

York, Maine

Pointers for Supervisors

(*Continued from page 136*)

veal a chance to show your interest, maybe not in big things but in little things. They're all important. Today, for example, take a look at the washroom. If it isn't clean and properly supplied, take care of it. Tomorrow, perhaps one of your new weavers calls in to report off sick. Stop by to see him at home, not with the idea of checking up to see if he really is sick, but to find out if you can be helpful in any way and to let him know you will be glad to see him back on the job.

Or maybe a maintenance man is having difficulty getting the necessary supplies. Look into it to see if it can be straightened out, and let him know the result of your investigation. Or possibly in your company mobile canteens travel through the departments. It's running behind schedule. Get hold of the person who can correct the schedule. An employee comes to you with a complaint about her pay. Look into it, get the right answer, and report your findings back as quickly as possible.

Be Sincere

There is scarcely an end to the kind of situations that arise, each one an opportunity for you to show your concern with the welfare of your people. Of course it's got to be sincere. If you can't do it and mean it, you'd better forget it. And don't feel you're being soft because you showed a little concern. After all, doesn't it get down

everything in stainless... including the kitchen sink

Whether you require stainless steel in bars — round, square, flat or hexagonal... billets... sheets... plates... wire... or angles, there is a form of Crucible REZISTAL stainless that will fill your specific needs. And Crucible REZISTAL stainless steel is available in a wide assortment of grades, gauges and finishes to meet the diversified requirements of all industries.

Crucible's staff of metallurgists and stainless fabricating specialists are well experienced in solving application problems in the chemical, food processing, dairy, textile, laundry, hospital, pulp and paper and a host of other fields — including uses for Crucible REZISTAL in household articles like cutlery, cooking utensils and the proverbial *kitchen sink*.

If you have a specialized application where the unique qualities of stainless will improve your product or your processing operations, don't hesitate to call in a Crucible representative who can give you the benefit of our broad experience. And when you buy stainless, be sure you specify Crucible REZISTAL, the quality brand of heat and corrosion resistant steels.

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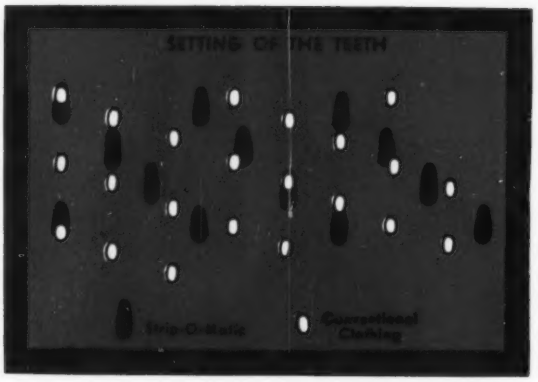
Booth Originators of STRIP-O-MATIC*

STRIP-O-MATIC Card Clothing



ANOTHER REASON FOR

STRIP-O-MATIC*

SUPERIORITY

Note the setting of the teeth on *STRIP-O-MATIC* as compared to conventional card clothing. Fewer teeth longitudinally, permit open spacing—result in less trapping of stock yet *STRIP-O-MATIC* has just as many points *transversely*, which are the points that count the most. In addition to *STRIP-O-MATIC* we manufacture a line of highest quality conventional card clothing for every textile fiber. Call on us for help with any carding problem. No obligation of course.

Sincerely,

E. Allen Snape Jr

President

MANUFACTURERS OF QUALITY CARD CLOTHING FOR OVER 60 YEARS

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BENJAMIN BOOTH COMPANY, ALLEGHENY & JANNEY STS., PHILA., PA.

Booth

to a fundamental of human nature? Rightly or wrongly, people are primarily interested in themselves. We can't change it, so let's recognize it. We can get others to cooperate with us better when they realize we are sincerely interested in what they are most interested in—themselves.

Give Credit Where Due

Maybe it seems a little trite to suggest to supervisors that their employees want recognition. Any supervisor worth his salt knows that, but how about your actual performance in recognizing the deeds of the people who work for you? How well do you practice what you know to be desirable? When was the last time you complimented someone for an especially good piece of work? If one of your employees suggests a better method for getting a job done, do you see that he gets the credit? How long has it been since you brought to the attention of your superior the outstanding accomplishments of somebody who works for you?

In this matter of giving recognition, simply knowing that it should be done is not enough. It has to be worked at, and as in the case of finding instances where you can demonstrate concern in employees' welfare, the opportunities for giving recognition occur frequently. It remains for you to be alert and to take advantage of the occasions when you can give a word of praise or pass a compliment. I think it is fair to say that most people want to do a good job. They want to look good in the eyes of the boss. Their knowledge that you recognize and appreciate their efforts is going to help you get that extra degree of cooperation that makes the difference between just average and good performance.

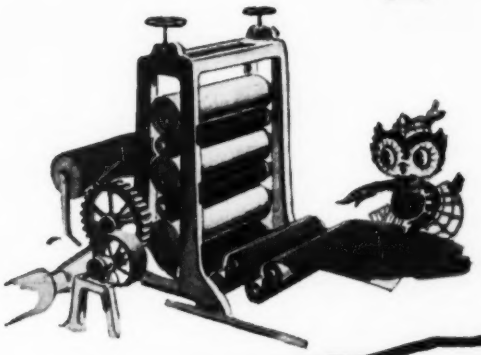
Everybody's Part of the Team

A lot has been said about the importance of giving people a sense of participation and a feeling that they are part of the team and perhaps sharing in the decisions that affect them from day to day on the job. Most supervisors would agree that when people are consulted about problems that affect them as individuals and have a chance to express their viewpoints, they will follow through more enthusiastically on the decisions reached. We all like to be "in the know." We like to feel that we are important enough to have our suggestions taken into account. We like to be consulted on problems where our job knowledge and experience can contribute to better solutions. The loomfixer, weaver, spinner, and card hand, on the average, think almost like we do. Therefore, an effective

All these
AT NEW LOW COST...

Stabilization

Crush Resistance



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To give you the greater economy and improved efficiency of RHONITE R-2 we have not sacrificed these other familiar RHONITE advantages—(1) storage stability; (2) easy handling; (3) excellent durability.

P. S. *It's a good finish for nylons, too.*

RHONITE *is a trademark Reg. U.S. Pat. Off. and in principal foreign countries.*

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

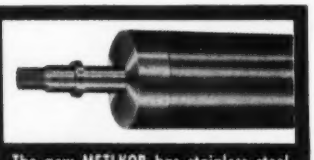
Representatives in principal foreign countries

Mr. M. K. Emerson, U.P.D. vice-president in charge of printing, says they "are more than happy" with the Jenkins METLKOR Brushes which replaced other types of applicator rolls and brushes formerly used. And Frank Du Bois adds: "In any case, we wouldn't go back to the older type, less efficient brushes for anything in the world."

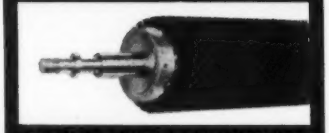
Such commendations from men who know, who demand the best brushes for a given job, is further assurance that you, too, can be certain of getting *the best brush for every textile brushing application* from Jenkins.

Our engineering services are available for analysis of your brush problems without charge or obligation.

Write or telephone your brush requirements.



The new METLKOR has stainless steel end plugs, is lighter, more corrosion-resistant. The stainless steel gudgeons and aluminum tubing are still retained.



This Nylon-filled Jenkins METLKOR furnisher brush shows the new and improved bronze end ring and stainless steel end plug.

M. W. JENKINS' SONS, INC.

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Cedar Grove, Essex County, New Jersey

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method of giving employees a sense of participation can pay dividends in better cooperation and better job performance.

Ask for It—and You'll Get It

I want to suggest one possible approach based on some recent experience in my company. The superintendent of maintenance held a series of meetings with the men in the various shops under his direction. He reviewed with the 15 or so men at each meeting some of the over-all problems facing the company, as well as specific problems with which they were more directly concerned, and requested their suggestions. In fact, he asked that they write him letters outlining any ideas they thought would help their jobs and thereby help the company.

The response was surprising. Many excellent suggestions were turned in, both orally and in writing, and the good ones were put into effect as rapidly as possible. And the meetings produced a degree of cooperation that had not existed before.

Use Workers' Knowledge

Obviously, such an approach is not always feasible; in this particular instance it worked. The same method is followed in many companies in their employee safety meetings. Employees are encouraged to make safety suggestions, and it is felt that this participation in the safety program makes employees feel a greater responsibility to observe safe practices and comply with safety rules. There is a fund of knowledge and experience in every group of employees. Your objective is to get it working for you. By letting them know your problems, by giving them a chance to suggest solutions, you stand to profit in two ways; first, you may get an idea previously overlooked; and second, you can get better cooperation in having your plans carried out.

Earlier I stated that there is no simple solution to the quest for full employee cooperation. I have outlined three principles that will be helpful: show concern for your employees' welfare, see that they get recognition when they earn it, and try to give them a feeling of participation in the activities that affect them most directly. Be alert to situations where you can put these principles into practice. Work at applying them just as earnestly as you work at correcting a quality problem or getting down costs that are out of line.

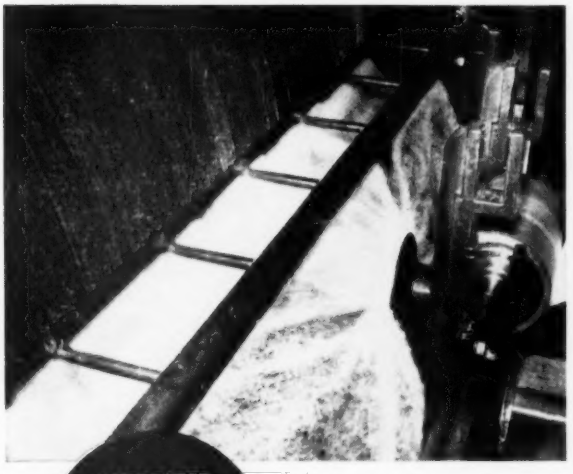
Finally, recognize that real cooperation is not attained overnight or by any one technique of human rela-

For more information, write direct or use Reader Service post card.

Choked with STATIC?

Call on AVISCO *Chemicals!*

These experiments in static control were made at the Avisco Textile Research Department, Marcus Hook, Pa.



UNTREATED SYNTHETIC FIBER GOING THROUGH WORSTED CARD

Static charge blows apart the web coming off the doffer comb . . . makes the web stick to metal machine parts . . . causes excessive fly. This web forms a non-uniform sliver . . . often jams in the rollers and breaks.

AFTER TREATMENT WITH AVISCO CHEMICALS

Here's the same fiber running smoothly through the same card. There's no more "ballooning" of the web. Sliver feeds out evenly. Fly has been reduced to negligible proportions . . . machine cleaning time slashed.

No matter what fiber you work with—cotton, acrylic, nylon, acetate, rayon, polyester or other—Avisco textile chemicals offer a new approach to your static control problems. And you'll gain further benefits, because these industry-tailored chemicals also do a superior job of softening and lubricating. They're readily scoured . . . won't become rancid in storage, discolor, or wick out at the top of the cone.

Avisco specialists will be glad to offer technical assistance in selecting the most effective chemicals for your applications, and in applying them in your mill. Write today for complete information.

Textile Chemicals Division,
P. O. Box 455, Marcus Hook, Pa.

Textile Chemical Sales,
1617 Pennsylvania Blvd., Philadelphia, Pa.

Avisco textile chemicals were developed in co-operation with and are manufactured by the Atlas Powder Company, Wilmington, Delaware

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America's first producer of man-made fibers

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FLANGES
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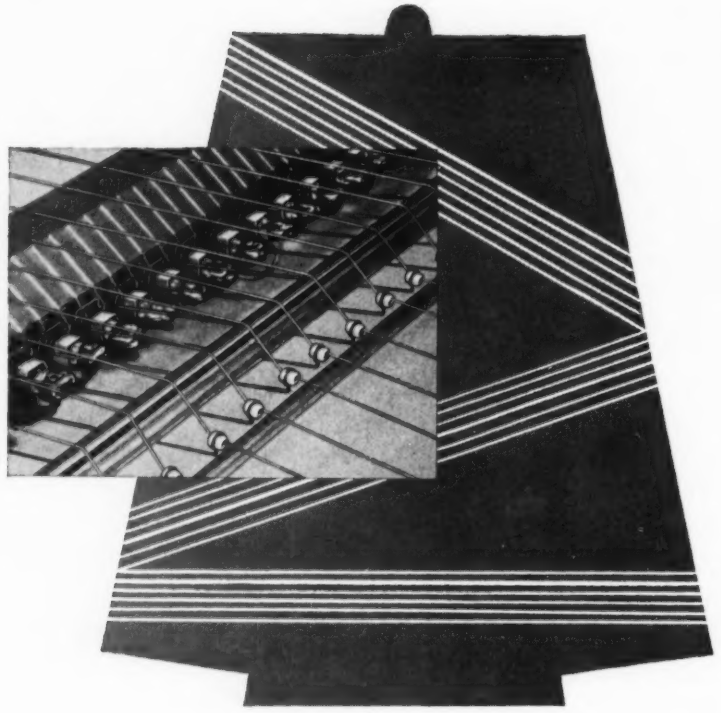

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New super sensitive electro-magnetic stop motion featuring sealed mercury switches developed to give instant action with minimum tension for extremely light yarns such as 15 denier Nylon.

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tions; it has to be built slowly, and it has to be earned by a quality of leadership that inspires confidence. And it has to be worked at everlastingly, because whole-hearted cooperation won slowly can be lost overnight.

Mill Maintenance

Keep Conveyor Belting In Good Repair

Conveyor belting must be repaired as soon as it is damaged or the service life of the belting will be cut short.

Belt fabric exposed to weather or moisture will absorb moisture if the protective cover is damaged. In warm weather, the moisture causes mildew and rot. In winter, ice crystals will gnaw at the fabric from within when the belt flexes.

Immediate repairs to damaged belting prevent the spread of damage and premature failure and also keep out water, which is the natural enemy of any conveyor belt.

These Tools Are Necessary

The tools needed and the procedures necessary to keep conveyor belting in good condition are outlined here by Thermoid Co., Trenton, N. J.:

An adequate kit to repair belts without vulcanizing them includes sharp cobbler's knives and a stone to keep them sharp, emery cloth, rubber cement, inner-tube patching rubber, rip plates, standard belt fasteners and accessories, and rags and gasoline for cleaning.

Vulcanized patches are superior to mechanical patches and require these tools:

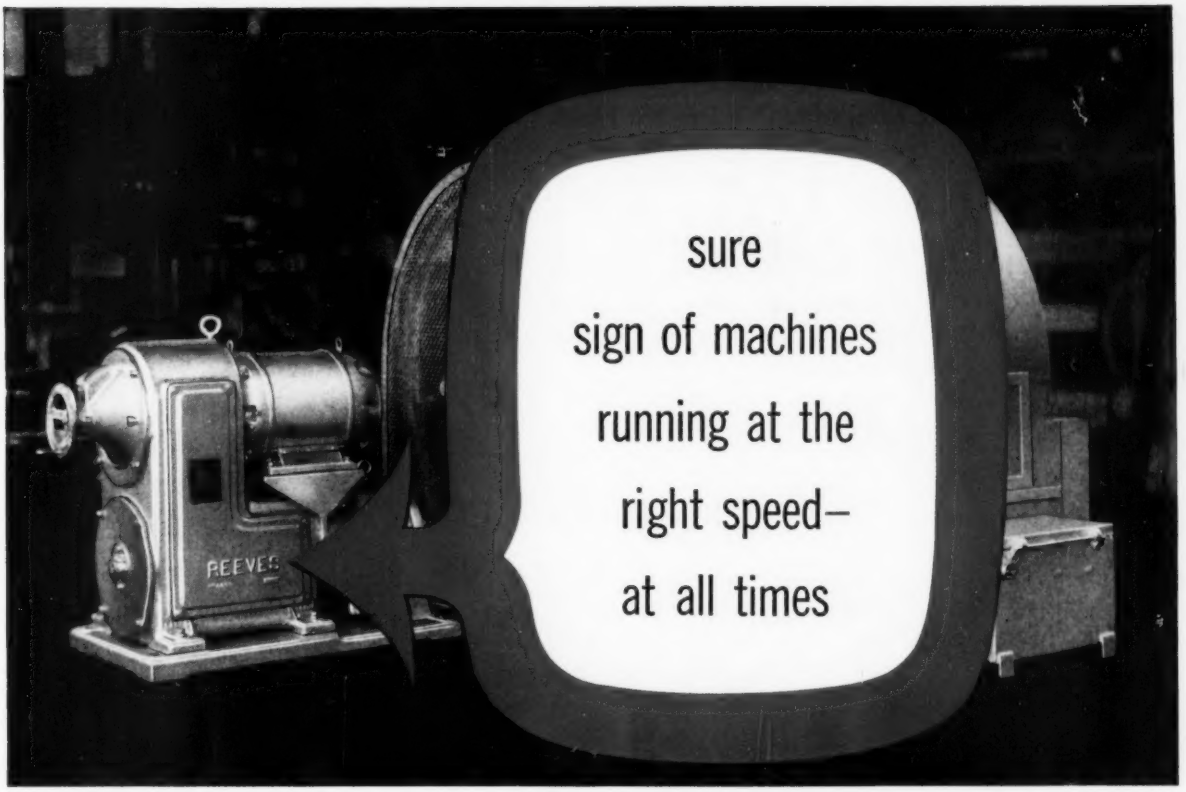
A portable vulcanizer, rubberized fabric, tie gum, cover stock, a one-ply knife, and fabric pliers.

When a new belt is installed, remnants should always be kept to patch the belt when it becomes damaged.

Keep the Belts Clean

In cloth rooms and in other departments where cloth is placed directly on conveyor belts, the belts must be kept clean to prevent soiled cloth.

Frequent cleaning of the belts with gasoline and rags will keep the belts free from grit and dirt. After they're cleaned, belts must be dried quickly with dry rags. Belts can be cleaned

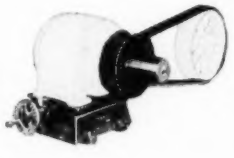


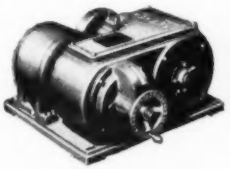
Reeves Variable Speed Drives

Reeves makes America's only complete line of variable speed drives —not 1, but 3 types to choose from

VARIABLE SPEED TRANSMISSION: Provides stepless speed adjustability over a wide range—as high as 16 to 1; sizes to 87 hp. Vertical or horizontal designs—open or enclosed.

VARI-SPEED MOTOR PULLEY: Converts any standard, constant-speed motor to a variable speed drive. Speed variations up to 4 to 1. Sizes to 10 hp.





VARI-SPEED MOTODRIVE®: A complete variable speed power plant. Combines any standard, constant-speed motor, REEVES speed-changing mechanism and gear reducer in one, compact unit. Sizes to 25 hp; speed ratios as great as 10 to 1.

Machines equipped with REEVES Variable Speed Drives . . . have a wider work range, handle more different shapes, sizes, and materials . . . because REEVES *always* provides the accurate, infinitely variable speed adjustability that is the key to efficient production.

With the turn of a handwheel, touch of a button, or automatically—*without stopping the machine*—you can change the speed to meet the need of every operation, every operator, and every operating condition. The result is higher rate of production and improved, uniform quality—at lower cost.

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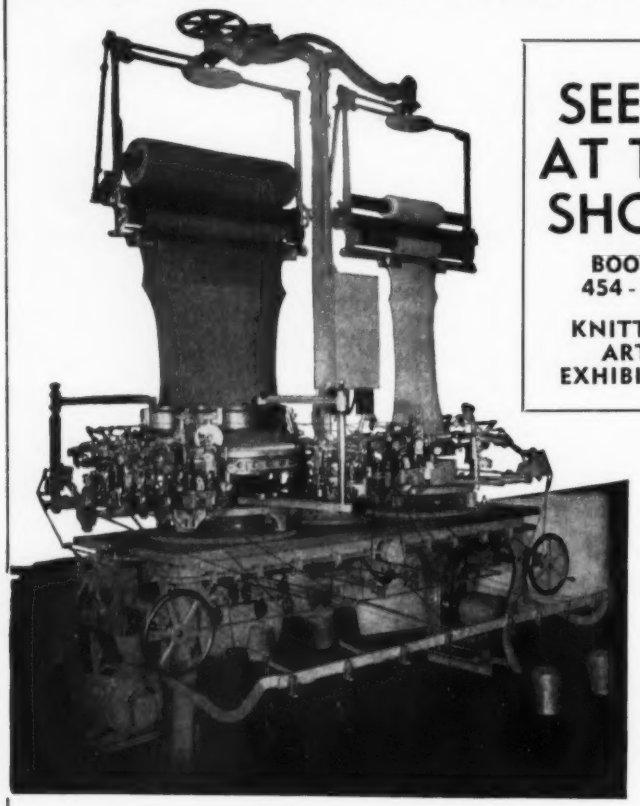
as one operator running Multiple Feed Latch Needle machines with same number of bobbins, plus

PERFECT CLOTH all the way!



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TOMPKINS D-2 DOUBLE HEAD SPRING NEEDLE KNITTING MACHINE

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WRITE OR PHONE FOR YOUR COPY of the NEW DATA SHEET which covers such important subjects as Fabric Flexibility; Perfect Rolls of Cloth; Needle Breakage Reduced One-Half; and Needle Savings!

SEE THE TOMPKINS D-2 IN PRODUCTION ON WHATEVER YARN OR FABRIC YOU WISH . . . SEE FOR YOURSELF HOW THE NEW SPEED AND NEW ECONOMY OF THIS MACHINE WILL ENABLE YOU TO COIN NEW PROFITS FOR YOUR MILL

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without removing them from the conveyor, but a better job can be done if they're removed and cleaned on a table or a clean area of floor. Both sides of the belt should be cleaned.

Clean belts not only insure against soiled materials, but the removal of grit also lengthens the life of the belts.

Mend Cuts and Gouges

To mend long, deep surface cuts that go through the fabric on rubber-covered belts, open the cut, clean out all dirt, cement the cut closed, and let the cement dry thoroughly before the belt is put back in service.

Where bits of torn cover leave exposed spots with only slight damage to the fabric, remove the loose ears of cover stock by carefully cutting a curved and beveled-edged area around the spot. Then sand the edges, apply the cement and let it dry, apply the tire-patching rubber, and skive the patch flush with the belt cover.

Where gouges have penetrated the belt, or lengthwise rips have occurred, clean the points and sand the edges. Cement the rips and reinforce them with rip plates every 3 in. Use rip plates on lengthwise rips only.

Widthwise rips require similar treatment, but standard belt fasteners are used instead of rip plates.

When holes in belting cannot be repaired with rip plates or standard fasteners, cut out the hole into the smallest possible rectangle with its sides parallel to and at right angles to the belt edges. Cut a piece from a belt remnant to fit the hole, and cement the edges of the holes and the patch. Then insert the patch into the hole. Fasten the patch to the belt with belt fasteners.

When it is necessary to prevent seepage of materials through belt repairs, remove one ply of fabric from a belt remnant and place it under the fasteners or rip plates.

To vulcanize a patch, remove progressively smaller blocks of fabric with each successive ply of belt that is to be replaced. Clean, roughen, and cement the cavity. Fit the block of new fabric into the belt, apply the uncured cover, skive the edges of the patch flush with the belt, and vulcanize the belt and patch together.

Be sure the belt is dry before the belt is vulcanized because moisture will cause steam blisters.

[If belts can't be removed from the machine and taken to an outside area when they're to be cleaned, Varsol or some other nonflammable solvent should be substituted for gasoline.

Carbon tetrachloride is an excellent agent for cleaning belt edges to be vulcanized, but the fumes are dangerous unless belts are vulcanized in an open area. Carbon tet should be locked up when not being used.—Editor]

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55 MADISON AVENUE • NEW YORK

B. F. Goodrich Chemical Company

Textile Highlights

FOR APRIL

Two binders for non-woven fabrics

A RECENT development in the textile industry that shows promise of new markets and new uses are non-woven fabric constructions. These are cotton or rayon fibers laid down and matted together in the same way as in paper with an organic film binder to hold them together for strength.

These non-woven fabrics are fairly soft and porous—their strength coming from the binder that holds the fibers together. The binder may vary from a small percentage of the total weight of the fabric up to a weight equivalent to the fibers themselves. This means that the binder may vary from a small percentage to a heavy saturation.

Two of the most successful of these binders are Geon vinyl latices and Hycar latices. Both possess characteristic properties which have made them successful in non-woven fabric constructions. The qualities of high tensile and tear strength with excellent binding action have given Hycar latices a position of advantage in certain saturation operations. Geon vinyl latices are highly recommended as binders in non-woven fabrics because of their excellent strength, their resistance to sterilization and their slight effect upon hand and softness of the fabric.

So far the major uses of non-woven fabrics have been in such throw-away items as hand towels and wash cloths, polishing cloths and the like. Their use has now been so well established that they are accepted for industry and household purposes, thanks to their moderate cost and disposable properties.

But a major objective of this new field is to extend the life and use of non-woven fabrics by improving the quality so that they can withstand washing and even dry cleaning, to make them durable enough for use again and again. Preliminary studies show that these constructions are possible and it will only be a matter of time before these sturdier non-woven fabrics are available.

In addition to these latices, B. F. Goodrich Chemical Company manufactures a series of other chemicals for the textile industry. They cover a wide range of uses in providing better quality finished textiles. A full discussion of these will be contained in a new textile bulletin to be available shortly. Write Dept. TH-2, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company
A Division of The B. F. Goodrich Company

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

Books of Interest

Case History on the Death of a Mill

THE FARR ALPACA COMPANY, A Case Study in Business History, by Frances Cornwall Hutner; Smith College Dept. of History, Northampton, Mass.; paper, 107 pages.

In 1873 the firm was capitalized at $250,000, composed of 2,500 shares of $100-par common stock. In 1923 Farr Alpaca Co. of Holyoke, Mass., was one of the largest integrated worsted mills in the country. In 1940 the company was liquidated, and stockholders received a total of $3.75 per share in liquidation dividends.

From records of the company that were turned over to Smith College at nearby Northampton, the author has been able to tell an interesting story on just what happened in the internal organization of this once-proud coat-lining mill that caused it to die. As usual, fatal indecision went on for many vital years because of a clash between older, more conservative personalities who didn't want to change their ways and personal contacts, and younger men who wanted to revitalize the company by branching out into newer fibers and processing techniques but were held in check by the older men.

One must congratulate the author on not losing herself in a mass of company detail; yet her choice of live quotations from company records shows well enough what was happening.

Year of Technology Summarized in One Volume

REVIEW OF TEXTILE PROGRESS, Vol. III; The Textile Institute and The Society of Dyers & Colourists, 10 Blackfriars St., Manchester 3, England, and 19 Piccadilly, Bradford, England; cloth, 590 pages, $5.

This annual review of worldwide technological progress in fibers, textile manufacturing, and wet processing is a valuable source of information for any textile man looking for a complete reference source on latest techniques in a single volume.

A surprising amount of summarized information is included, even if it is only a sentence or two or a short paragraph on each new development. Indications as to where in textile literature the original source material can be found are made in footnotes at the bottom of each page.

This new edition has 11 sections. Additions this year include papers on the physics and chemistry of nylon, on sizing

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NEW CIBALAN® DYESTUFFS "FAMILY" GIVES IMPROVED LIGHT & WET FASTNESS ON WOOL, SILK, NYLON, BLENDS

12 Cibalan Colors provide immediate diversified range. Dyeing procedure is short and easy.

The development by Ciba Research of the Cibalan line of dyestuffs has been the culmination of years of research to meet a widespread need of dyers for a group of colors which by simple and shorter application methods would produce very fast shades on wool without appreciable loss of the natural characteristics, resiliency and strength. While the research objective was primarily to develop a line of colors with exceptional light and wet fastness for wool, Ciba Research has extended the practical use of these "metal complex" dyestuffs to encompass nylon, silk and blends as well.

With the practical needs of the dyer further in mind, the Cibalan line of dyestuffs were withheld until a range of 12 colors could be made available. The entire range of Cibalan colors are listed below.

The Chemistry of Cibalan Colors

The Cibalan dyestuffs can be said to have happily combined in their chemical constitution, behavior in dyeing, and in certain of their properties, features which in a broad sense place the Cibalans between the Neolan and Chrome Fast dyestuffs. Like the Neolan colors, the Cibalan dyestuffs are "metal complex." This means that *in the dyestuff molecule* a metal is formed which produces a soluble-metal dye complex with an affinity for animal fibers. These complexes are extremely stable and are noted, above all, for their high resistance to sunlight exposure.

The union of metal to dye within the molecule makes it possible for fibers dyed with Cibalan dyes to be spun readily. This is a very apparent advantage over Chrome dyed wool where the building of the complex takes place *within* the fiber itself. With Cibalan dyes no fiber embrittlement occurs which means the fiber may be drawn and spun after dyeing into a more even yarn that is trouble-free in winding, knitting and weaving.

Some of the advantages offered by Cibalan dyestuffs are . . .

1. Light and wet fastness equal to Chrome colors but dyed by a shorter simpler procedure.
2. The simple neutral dyeing produces wool raw stock, with unusual loftiness and fiber strength. See if your carding room overseer does not agree.
3. Tippy wools and wools of various origins are dyed uniformly.
4. Cibalan dyed woolens are practically unaffected by chlorination shrink proof processes.
5. In blended fibers and fabrics the wool, nylon and silk components can now be dyed as fast to light as the cellulosic fibers with Chlorantine Fast types.
6. In the above blends Cibalan shades are unaffected by copper salt after-treatment of the dyed cellulosic fibers.

Wool, Silk, Nylon fabrics made from Cibalan dyed stock, tops, yarn and piece goods mean increased consumer satisfaction. Cibalan dyestuffs offer new opportunities for the production of shades of outstanding fastness on loose wool, slubbing, weaving, knitting and carpet yarns, and piece goods.

The CIBALAN *Colors*

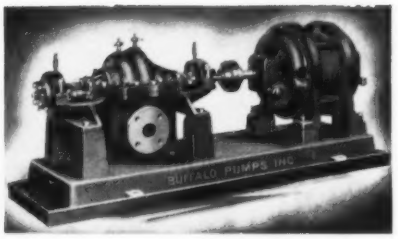
The following original types represent the beginning of this interesting series . . .

CIBALAN YELLOW GRL
CIBALAN YELLOW 2BRL
CIBALAN ORANGE RL
CIBALAN BROWN 2GL
CIBALAN BROWN BL
CIBALAN BROWN TL
CIBALAN KHAKI GL
CIBALAN SCARLET GL
CIBALAN BORDEAUX 3BL
CIBALAN BLUE BL
CIBALAN GREY BL
CIBALAN GREY 2GL

For further details on Cibalan dyestuffs, address Ciba Company, Inc., *627 Greenwich Street, New York 11, N. Y., or contact the Ciba offices in Boston, Chicago, Charlotte, Providence, San Francisco or Philadelphia.*

"Buffalo" *Tips on Better Pumping*

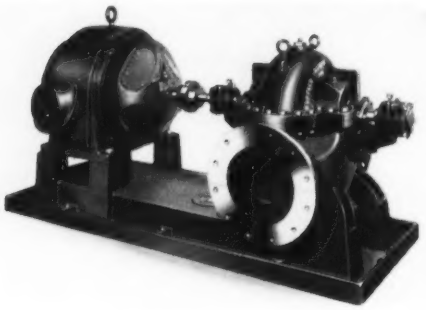
ADVANTAGES of 3 TYPES of CENTRIFUGAL PUMPS



"Buffalo" Type "RR" Two-Stage Pump

MULTISTAGE — EFFICIENT DESIGN FOR HIGH PRESSURES

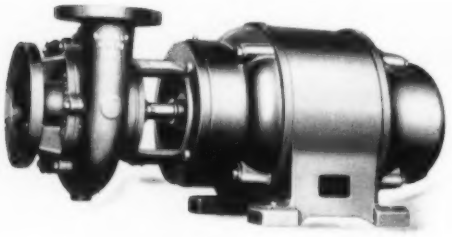
"Buffalo" builds these durable, easy-to-maintain pumps in two and four stages for heads up to 1500 feet. Each additional stage develops additional pressure, a highly desirable feature for jobs such as boiler feed. Impeller receives ideal support from bearings on both sides. Horizontally split shell provides quick accessibility. For further details, write for Bulletin 980.



"Buffalo" Type "SL" Double Suction Pump

DOUBLE SUCTION — EFFICIENT IN MOVING HIGH VOLUMES — IMPELLER SUPPORTED FROM 2 SIDES

Taking in clear water from both sides of its enclosed double suction impeller, this "Buffalo" Type "SL" Pump is ideally suited to handling large volumes efficiently. Correctly formed water passages and perfect hydraulic balance add to its efficiency. Bearings on both ends of oversize impeller shaft assure maximum life. Large capacity range, from 10 to 10,000 gpm, for air washers, chilled water, humidifier, general service. Write for Bulletin 955-P.



"Buffalo" Type "CCL" Pump

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Available in all iron or special alloys, these husky single suction pumps are built as a unit — require no alignment during installation or afterwards. Each design — single suction, double suction, multistage — offers particular advantages. "Buffalo" builds all types, to give you the best possible pump for your job. Write for details on the full line.

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BUFFALO PUMPS, INC.

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Subsidiary of Buffalo Forge Company

Canada Pumps, Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

and sizing materials, on felt, and on industrial applications of textiles.

Sixty-five of the book's 590 pages are taken up with a complete inventor-and-author name index and a well-organized subject index.

How To Pay, Hold, And Satisfy Executives

EXECUTIVE PAY PLANS: 1953, by William J. Casey and J. K. Lasser; Business Reports, Inc., 225 W. 34th St., New York 1, N. Y.; 8½ x 11, 160 pages, $12.50.

Today's forward-looking companies give their executives two, three, and four types of compensation. These include a basic salary, pensions, stock options, and long-term contracts that assure the executive part pay on retirement and guarantee his family a reduced scale of income for a limited period after his death.

How executives can be aided in building up capital and an estate through incentives to stay with the company and perform on the job is shown in this business study. Workable and economical plans are suggested and summarized.

Other angles to the problem that are covered include inflation, taxes, bonuses, deferred compensation, profit sharing, group insurance, and expense arrangements.

Details on Woolen And Worsted Processing

THE BRITISH WOOL MANUAL; Harlequin Press Co. Ltd., Old Colony House, South King St., Manchester 2, England; cloth, 543 pages, $7.50 or 50 shillings.

The eight main sections of this standard text on wool processing include the composition and properties of wool fibers, woolen and worsted spinning, woolen and worsted weaving, woolen knitted fabrics, the dyeing of wool and wool blends, the finishing of woolen and worsted fabrics, and the proofing of wool.

Full-page plates, sketches of particular motions, fabric-design layouts, specific calculations, and a variety of practical tables are presented along with the text.

Much of the equipment described is of British manufacture, but the basic principles discussed in the text are worth having on hand to refer to, whatever nationality machinery a wool processor may have in his particular mill.

Alphabetized Listing of Various Color Standards

COLOR STANDARDS AND COLOR RESEARCH, by the Research Division of Faber Birren & Co., 500 Fifth Ave., New York 36, N. Y.

If you need to know where to obtain the more important color standards that are available today—85 of them, textile and otherwise, are described in brief para-

Wherever you go in the textile industry, you'll find machines mounted the modern way — on UNISORB. This installation is in Denmark . . .

and **IN PLANT**

AFTER PLANT AFTER PLANT

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MOUNTINGS

REDUCE VIBRATION & NOISE 60% TO 85%

When you install or relocate looms, cards, twisters, warpers or any textile machines, you'll save money and get a better job by mounting them on UNISORB. By eliminating bolts and lag screws, and reducing transmitted noise and vibration 60% to 85%, UNISORB helps you prevent floor damage, reduce machine maintenance, increase floor life, boost output per shift.

Our special adhesive holds UNISORB Mountings tight to floor and machine, yet permits repositioning of machines. UNISORB is also available pre-coated with adhesive, for use with machines that do not require shimming.

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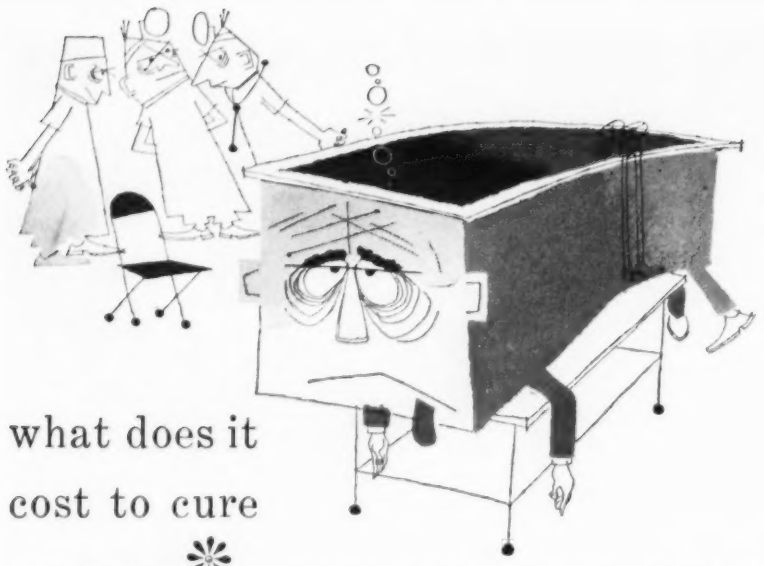


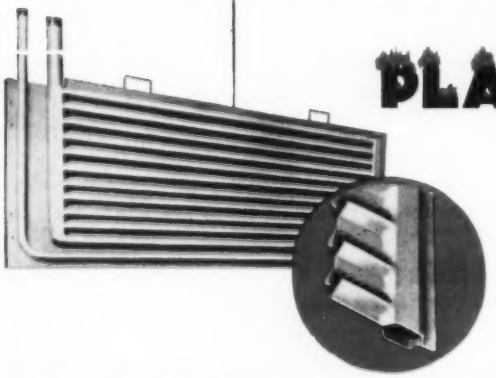
what does it
cost to cure
coil-itis in your processing tank?

The constant care it takes to keep tanks operating when they're plagued with coil-itis is extremely costly. Downtime, and all the other maintenance time, slow heating and cooling ills of using old-fashioned pipe coils can be cured with Platecoils. As revolutionary as the new wonder drugs, Platecoils save as much as 50% in initial cost. They take 50% less space in the tank. They simplify maintenance and save hours of downtime. Compared to the hours it takes to clean and replace pipe coils, Platecoils can be cleaned and replaced in no time at all . . . without dumping the solution. It costs less to cure coil-itis with Platecoils than to suffer its evils. **Write for bulletin P32 today!**

PLATECOILS SAVE 50% IN HEAT TRANSFER COSTS

PLATECOILS COST LESS TO BUY, INSTALL, MAINTAIN

The Newcomb-Detroit Co., Grand Rapids Division, has found it is less costly to buy, install and maintain Platecoils than to fabricate pipe coils in their own plant. Ask about other case histories.



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Coil-itis — Diagnosed as tank heating and cooling problems. **Platecoils** — the prescription for solving pipe coil problems.

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graphs here—you can obtain this concise 20-page booklet free of charge by writing to the Birren company.

Three Films Available On Industrial Safety

PICK YOUR SAFETY TARGET, an all-color cartoon film based on actual accident-reduction plans within industry, features a foreman beset with an accident-ridden department. Available as either a 35-mm. sound-slide or 16-mm. sound-motion film, the reels are available at a small fee from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

A GRAY DAY FOR O'GRADY, also available from the National Safety Council as a 35-mm. black-and-white sound-slide film, uses a series of comedy situations to dramatize the high cost of accidents.

SAFETY SAVES, an industrial truck-drivers' training film, is available on a loan basis as a 30-min. sound movie from Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich. The adventures of Willie the Cowboy, a hot-rod fork-truck driver, point up the "do's" and "don'ts" of safe truck driving. Instructions for operators of towing tractors and hand trucks are also included.

New Weaving Mill

(*Continued from page 75*)

is soon reached because a gauge always determines the correctness of a loom setting.

Our looms are completely washed at each warp out. Then they are checked by the loomfixer for worn parts, reset by the gauges, and lubricated by a trained oiler. The supervisor checks the loom after the loomfixer has signed a check card and brings the loomfixer back if the loom has not been set correctly. The loomfixer must really check the loom—not just sign a card.

A Parks & Woolson shearing machine and four cloth-inspecting and grading frames are used in the cloth room. Minor cloth-defect corrections, such as pulling out short jerk-backs, are made as the cloth is inspected and graded.

The regular point system is used to grade the cloth. McBee grading tickets record the seconds points. We keep a copy of the cloth-grading ticket in our files so that we can trace any roll of cloth back to the loom, weaver, and cloth grader when necessary.

One employee in the office does all our bookwork on shipping, receiving production, and seconds. The office employee also makes out the master duplicating sheets for the McBee

On OWENS-CORNING Flyer Twisters...

"There's No More Downtime Due to Faulty Lubrication

Thanks to *Lincoln* Centralized Lubrication Systems"

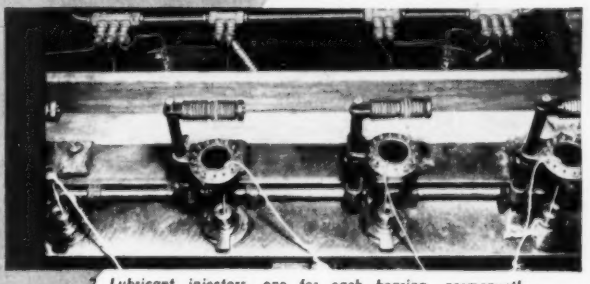
E. Bay, Chief Engineer
Owens-Corning Fiberglas Corp.

"As a result of the use of Lincoln Centralized Lubrication System on high-speed textile flyers, twisting yarns in our Ashton plant, there has been no loss of production due to improper lubrication. We find Lincoln's Centralized Lubrication System very reliable, since it is fully automatic.

"We also would like to state our satisfaction in the interest shown by the engineers of the Lincoln Engineering Company in helping us with our lubrication problems."

E. Bay, Chief Engineer
Owens-Corning Fiberglas Corp.

1. Lincoln CentrOmatic Pump serving the distribution system of lubricant injectors connected to machine bearings.



2. Lubricant injectors, one for each bearing, permanently attached to bearings by steel feed lines.

IN ONE MILL AFTER ANOTHER, Lincoln Centralized Lubrication Systems are helping to increase yield and reduce operating costs from existing facilities by assuring the application of

the RIGHT LUBRICANT
in the RIGHT QUANTITY
at the RIGHT TIME
Automatically

LINCOLN'S Lubrication System specialists will be glad to work with you and recommend the time and money-saving Centralized Lubrication System best suited to your equipment.

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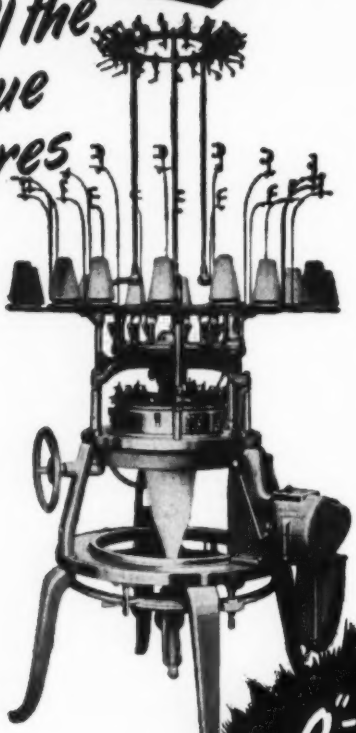


9"-30" DIAMETERS

20-24 CUTS

★

Send for full details, to the builders of more than 7000 Interlock machines operating successfully in almost every country in the world.

MELLOR BROMLEY & CO. LTD

LEICESTER · ENGLAND

tickets and prints the tickets. A ticket starts with the warper operator and goes through the slasher man, warp hanger, loomfixer, and supervisor of weaving before it is finished. Each person's name appears on the ticket so that bad work can be traced.

We are sure that we can continue our production and seconds record because we keep all our machines in good mechanical condition and because our employees are well trained and interested in their work.

Supervisor and His Job

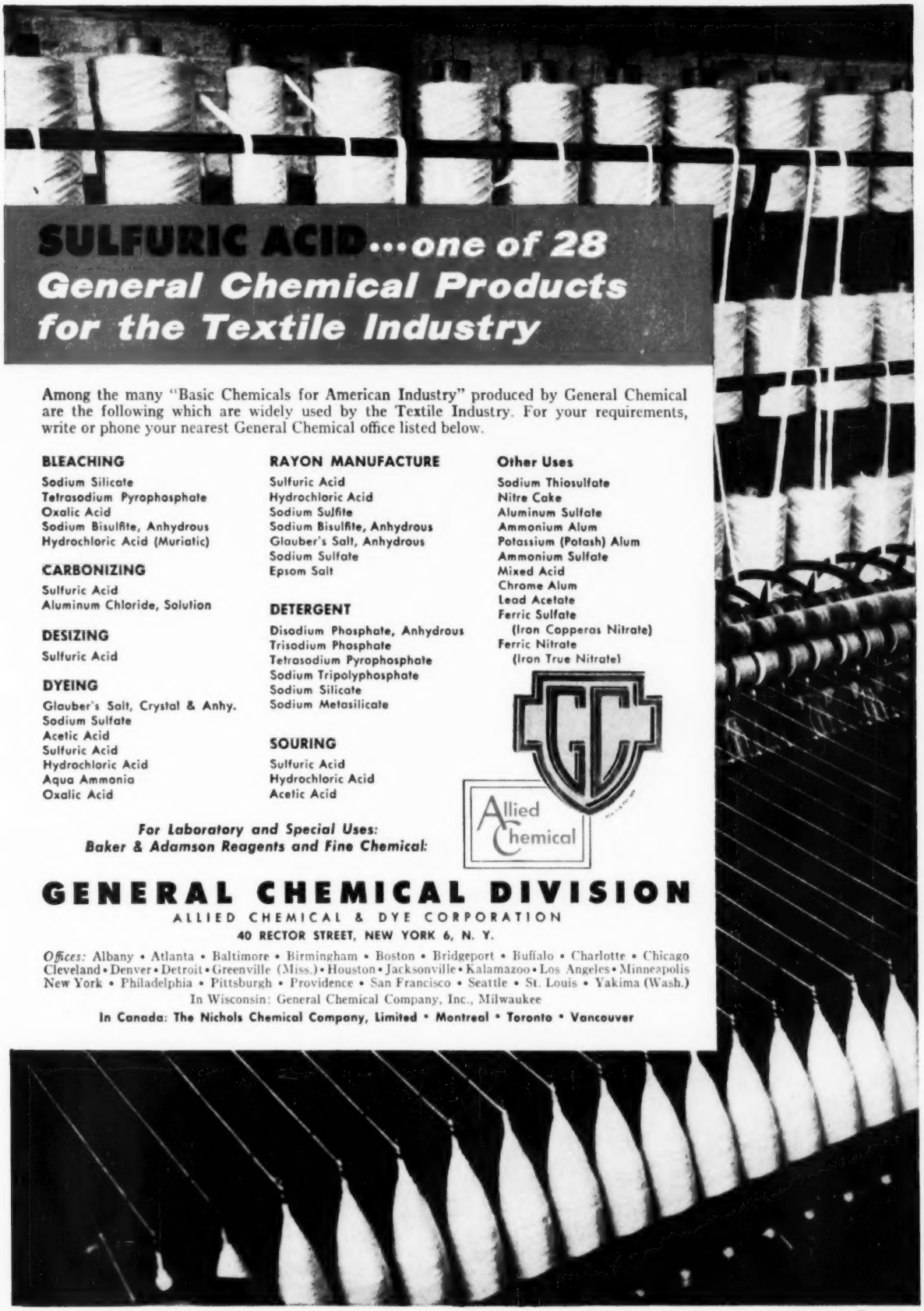
(*Continued from page 72*)

5. Be sincere with praise and considerate with reprimands
6. Give workers a chance to develop; help them in every step
7. Study workers carefully; judge them honestly and never let personalities enter into dealings
8. Develop workers' confidence by being loyal and fair to them
9. Place workers according to ability and temperment
10. Support your workers by assuming full responsibility for their work
11. Know your workers, but know them honestly
12. Handle grievances, both real and imaginary
13. Give clear and direct orders in simple language. Repeat if necessary and as many times as necessary
14. Develop appreciation of moral values
15. See that working conditions are satisfactory
16. Train workers in safety practices
17. See that fair compensation is given in line with company policies
18. Plan production adequately and see that both production and quality are maintained

What Workers Expect[1]

What the company expects of the supervisor or management man is one side of the picture. The other side is what the workers expect of him. Specifically, the worker wants his supervisor to:

1. Keep him busy without driving him
2. Know the capacity of each man and judge him honestly
3. Teach him how to do a job correctly, thoroughly, and without omissions
4. Maintain discipline
5. Provide proper and full safety instructions, and insist upon their being carried out
6. Be willing to discuss grievances



SULFURIC ACID...one of 28 General Chemical Products for the Textile Industry

Among the many "Basic Chemicals for American Industry" produced by General Chemical are the following which are widely used by the Textile Industry. For your requirements, write or phone your nearest General Chemical office listed below.

BLEACHING
Sodium Silicate
Tetrasodium Pyrophosphate
Oxalic Acid
Sodium Bisulfite, Anhydrous
Hydrochloric Acid (Muriatic)

CARBONIZING
Sulfuric Acid
Aluminum Chloride, Solution

DESIZING
Sulfuric Acid

DYEING
Glauber's Salt, Crystal & Anhy.
Sodium Sulfate
Acetic Acid
Sulfuric Acid
Hydrochloric Acid
Aqua Ammonia
Oxalic Acid

RAYON MANUFACTURE
Sulfuric Acid
Hydrochloric Acid
Sodium Sulfite
Sodium Bisulfite, Anhydrous
Glauber's Salt, Anhydrous
Sodium Sulfate
Epsom Salt

DETERGENT
Disodium Phosphate, Anhydrous
Trisodium Phosphate
Tetrasodium Pyrophosphate
Sodium Tripolyphosphate
Sodium Silicate
Sodium Metasilicate

SOURING
Sulfuric Acid
Hydrochloric Acid
Acetic Acid

Other Uses
Sodium Thiosulfate
Nitre Cake
Aluminum Sulfate
Ammonium Alum
Potassium (Potash) Alum
Ammonium Sulfate
Mixed Acid
Chrome Alum
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Ferric Sulfate
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Ferric Nitrate
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How Portable AerVoiDs fit into Industrial Feeding

AerVoiD *Vacuum Insulated*
HOT FOOD, SOUP AND COFFEE CARRIERS

PORTABILITY DOES IT!

By providing a means by which hot foods and liquids can be transported and serviced at a distance from the kitchens where they are produced, AerVoiD Vacuum Insulated Hot Food Carriers do a job in industrial feeding that cannot be accomplished with any other equipment.

AerVoiDs are the only complete line of portable food servicing equipment on the market.

In storing, transporting, distributing hot foods AerVoiDs do a 3-ply job in industrial feeding, fitting into any industrial feeding setup.

Ways in which AerVoiDs fit into industrial feeding are enumerated at right.

Food consultants to help you with any industrial feeding problem without cost or obligation.

Write for Folder TW-53

"The Job AerVoiDs Do In Industrial Feeding"

VACUUM CAN COMPANY
19 SOUTH HOYNE AVENUE CHICAGO 12, ILLINOIS

AerVoiD Mobile Canteen. Hot coffee, hot soup and light refreshments for workers near their work.

Industrial Plants Use AerVoiDs to

- transport hot foods to workers that cannot get to cafeterias without too much loss of production time
- provide midshift coffee break to workers near their work (Plant and Office)
- provide hot foods for night workers after cafeterias are closed
- provide hot foods for increased personnel
- transport hot foods from kitchens to canteens
- provide hot foods for overtime workers
- provide hot foods for outdoor workers
- centralize food production.

HERE'S AN EXAMPLE

Hot foods, hot coffee on the way to Cannery workers in the field to save time lost bringing workers in for meals.

fairly. Know both sides of a grievance before action is taken

7. See that production procedures are followed. In case of mistakes, investigate and hold the right person responsible

8. Be a good workman as well as a good supervisor

9. Be well liked and have the respect of other supervisors

10. Know his own job thoroughly

11. Treat a worker as he would like to be treated himself if he were on the worker's job

12. Be honest in all dealings with him

Supervisors Need Constant Training

Almost any management man will tell you that one of his primary problems is training supervisors. And nearly any good supervisor will tell you that one of his main projects is improving his own supervisory skill.

"Primarily, the job of training supervisors in the principles of human engineering is one of indoctrination, making them management-conscious, training them in the methods of formulating sound judgment, teaching them the fundamentals and principles inherent in good supervision, guiding them in the application of these principles to their own problems, and following up to see that they practice what they are taught."[1]

Many training courses for supervisors have either failed or had only slight success because the principles of good supervision were not adequately interpreted to the trainees.

Most training courses deal with the mechanics of supervision and the solutions of specific types of problems. They overlook the fact that the principles of good supervision must become part of the supervisor's personality. The reaction of one individual to another is a reaction of personalities and mental attitudes. The successful supervisor is one whose personality, attitudes, and thoughts reflect the influence of sound supervisory principles.

In devising and executing a training program for supervisors, management should place great emphasis on instilling in the trainees a knowledge of and respect for proper supervisory principles. These principles should be pointed out, discussed, demonstrated, and reviewed over and over until they are so strongly implanted that they not only influence, but dictate, the thought patterns of the supervisor.

Different supervisors will apply the principles differently. But the method of application will be satisfactory, and successful, if the principle is properly followed.

Training should not stop with the

Stainless Steel roll jackets on these slashers

save $163.47 per year

in maintenance costs

◀ Use of Stainless Steel jackets on the two cloth-covered rolls at the left has reduced maintenance costs and eliminated rust contamination. The jackets were made by West Point Foundry, West Point, Ga. Size boxes on Monroe Cotton Mills' three slashers are also Stainless and have been in service five years.

These three kettles in the size mixing room at Monroe Mills are also Stainless Steel. They have been in service seven years, and have eliminated the continuous repair necessary when tanks were of other materials. ▼

IN July, 1949, Monroe Cotton Mills, Monroe, Ga., began using Stainless Steel jackets on the sizing and finishing rolls of three slashers. In the next 12 months, these Stainless jackets accounted for a saving in maintenance costs of $163.47, or $54.49 per slasher.

Cast iron rolls were used previously and required cleaning at six-month intervals. The company estimates labor costs for the twice-yearly cleaning of the three slashers at $110.40, to say nothing of lost production during the eight-hour shutdown at each cleaning.

The remaining saving of $53.07 is in slasher cloth. The Stainless jacket rolls produced more than 1,000 yards of additional fabric per yard of slasher cloth, due to elimination of rust.

These maintenance savings alone paid the entire cost of the Stainless roll jackets in less than two years. And they still had years of service life left. In addition, "appreciable" savings were realized from elimination of rust-contaminated yarn before each semi-annual cleaning.

For minimum maintenance, long service life and freedom from product contamination, take advantage of the corrosion resistance of Stainless Steel. Its tough, dense, smooth surface is kind to fabrics wherever you use it in the mill. And for finest performance, be sure your equipment fabricator uses U·S·S Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH · AMERICAN STEEL & WIRE DIVISION, CLEVELAND · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH · TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
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SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

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This Handsomely-Designed box protects, displays, sells, features product-use instructions, is handy for storage. Get the facts on "tell and sell" packages, send for booklet "Pack to Attract."
Hinde & Dauch, Sandusky, Ohio.

H&D

HINDE & DAUCH

37 MILLS AND FACTORIES • 40 SALES OFFICES
Our 65th Year

end of the formal course. There should be frequent follow-up and review to make certain that supervisors do not lapse into former habits of thought and action.

There should also be constant testing of the principles against experience. As events occur, circumstances change, and the broad outlook of workers change, the principles may require different interpretations.

It has been said over and over that human nature does not change. Whether or not that is true, it is certain that workers rapidly change their expectations of supervisors and management. Although basic supervisory principles may not change, their interpretation and execution must keep up with changing worker outlooks and attitudes.

An entirely new type of supervisor, using completely different techniques, has come into mills in the last generation. Chances are good that today's supervisor and his techniques will be completely out of date a generation from now.

References:
[1] Spriegel, William R. and Shulz, Edward: *Elements of Supervision*
[2] Halsey, George D.: *Supervising People*
[3] Gardner, Burleigh B., and Moore, David G.: *Human Relations in Industry*
[4] Holston Ordnance Works, Tennessee Eastman Corp.: *Foreman's Notebook*

Blends on French Combs

(*Continued from page* 117)

for combing viscose on the French system are no more critical than those necessary for Noble combing. Both operate well at 74° F., 62% r.h.

In general, crimped varied-length viscose staple combs more easily than a uniform-length uncrimped staple. This tendency varies, of course, with the type of man-made fiber being combed.

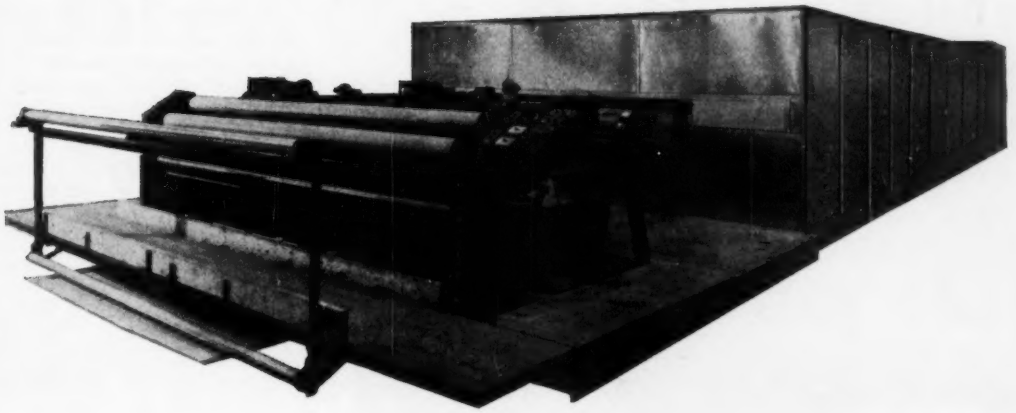
With uncrimped viscose staple, the use of cans in creeling rather than balls is found desirable. The lack of resiliency of viscose fiber causes balls in the creel to turn soft and fluff off at the bottom. Also, false twist sets in uncrimped rayon sliver when it is on balls; and when the sliver is passing through the comb, undue strain is put on the pins because the false twist will not draft or comb out regularly.

5.5-Den. Crimped Staple

The following illustration is given as a workable layout for 5.5-den. 3½- to 5-in. dull crimped staple that has been picked, carded, and given two preparatory gillings. It should be kept

McCreary sets the pace in finishing equipment for tricot and other knit goods

The McCreary continuous process for feeding, drying and setting nylon and other synthetic tricots.



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all electronic setting method, assuring uniform heat control across fabric.

Automatic Feed

with electronic guider control and dynamic braking — assures perfect tenter pinning control.

Tenter Frames

sturdy construction and many new advanced engineering features assure the ultimate in low cost, trouble free tenter frames.

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Driers

high velocity, jet type, giving low cost efficient operation.

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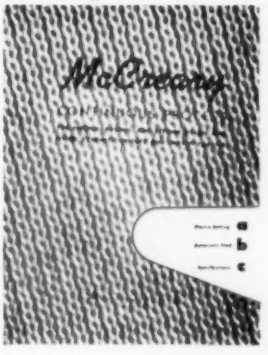
ideal for underwear, fleece lined fabrics, and looped cloth. Heavy duty construction particularly designed for multiple speed changes.

Single and Double Roll Brushers

especially suitable for sweater fabrics. Usual McCreary advanced engineering design and sturdy construction.



For further information write:

McCreary MACHINE WORKS, INC.
COHOES, NEW YORK

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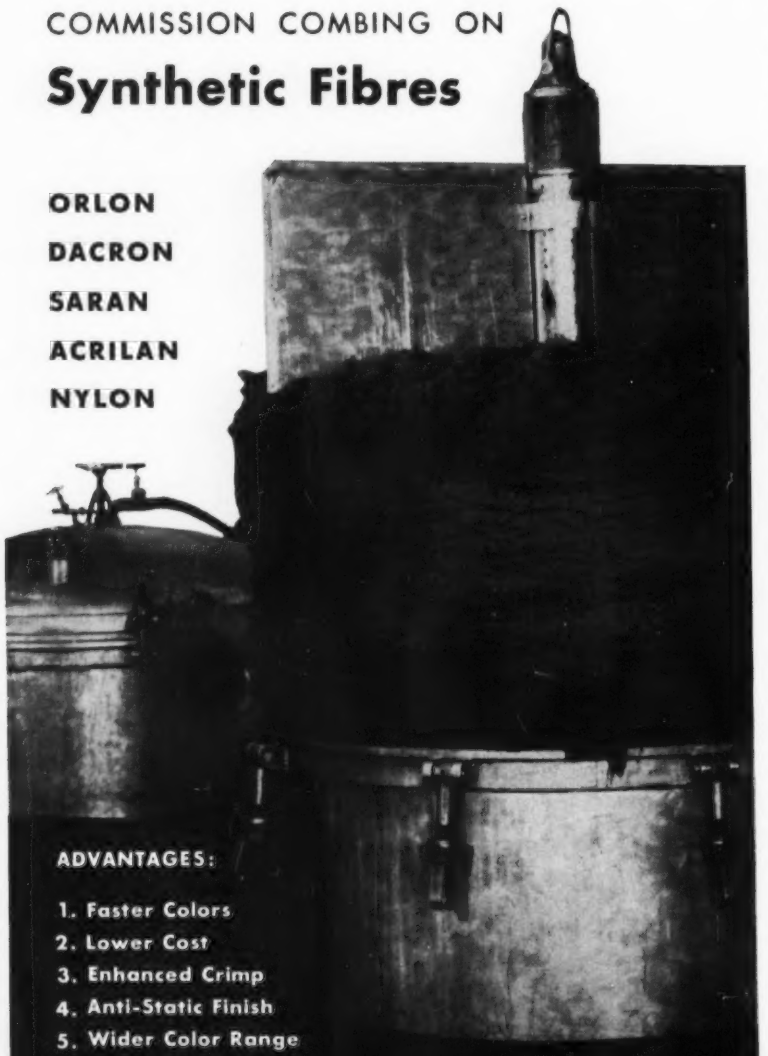
An Invitation to use our

HIGH TEMPERATURE STOCK DYEING and

COMMISSION COMBING ON

Synthetic Fibres



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NYLON

ADVANTAGES:

1. Faster Colors
2. Lower Cost
3. Enhanced Crimp
4. Anti-Static Finish
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in mind that French-comb pin bars are 14 in. wide.

1. 20 ends are fed from cans at 175 grains per yd. each.
2. The top comb has 56 to 60 pins per in.
3. Pinning is in half lap, as indicated in the accompanying panel.
4. Long-wool cams are recommended.
5. Run 90 to 100 nips per min.
6. Production will be approximately 14 lb. per hr. with a noilage figure of 1.87 to 2.0%.

3.0-Den. Viscose

In going to a finer denier such as 3.0-den. viscose, the pinning in the coarse half lap remains the same. A medium finisher half lap should be sufficient for acceptable combing. Bars would be pinned as follows:

Row	*Pins per Inch*
10	40
11	40
12	45
13	45
14	53
15	58
16	66
17	66
18	66

The pinning on the top comb should be increased to 66 pins per in. Finisher gillings are the same as for 3.0-den. Noble-combed viscose, with the exception that a somewhat lower draft may be necessary in the first finisher operation for the same fiber length. So drafts from 4 to 5 are suggested. And in cases where a short staple is being combed, even these draft figures may have to be reduced.

Quality Control

(*Continued from page 105*)

taken so that any necessary changes or rechecks can be made rapidly.

The daily quality-control reports also interpret any significant trends. When five or more points fall on the same side of the past average, the chart is marked "continues" (as "continues heavy," "continues high range," "continues weak," etc.). This trend is significant even though all points might be within the control limits. The overseer takes action if he thinks it is necessary.

Similarly, the control charts for gray-cloth strengths and weights are interpreted for the weave-room overseers when out-of-control points exist.

Out-of-control points for the finished-cloth strengths are reported directly to the responsible bleachery

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This Picker STANDS OUT Because

It Gives . . . LOWEST COST PER LOOM PER YEAR

Outstanding weavers and loom fixers have written the specifications for Denman Pickers. Their assistance has made possible a combination of the best running qualities for good weaving with maximum loom economy.

Terrell field men are trained to analyze the job and recommend the proper picker for it. This is part of the service that goes with every Denman installation.

This combination assures you the best performance from today's best picker—Denman Pioneer.

MADE BY

DENMAN TIRE & RUBBER CO.

Exclusive Sales Representative

THE TERRELL MACHINE COMPANY, Inc.

CHARLOTTE, NORTH CAROLINA

when the corresponding gray chart does not show the same condition. Significant conditions have been called to a bleachery's attention for corrective action more than once.

Weekly quality report summaries are also distributed to the supervisors and the president, and show the percentage of "OK," "warning region," and "out-of-control" points for each department. These percentages are compared with those of the previous week and with the average of all previous weeks since the last revision of the limits. With this system, points are seldom out of control longer than two days.

How We Take Samples

In our yarn testing, we rotate throughout the frames on a yarn number until all spindles and frames have been covered. We take the Monday, Wednesday, and Friday samples of the yarn from specific positions on specific machines. On these days the frame numbers appear with the actual data on the reports of the tests.

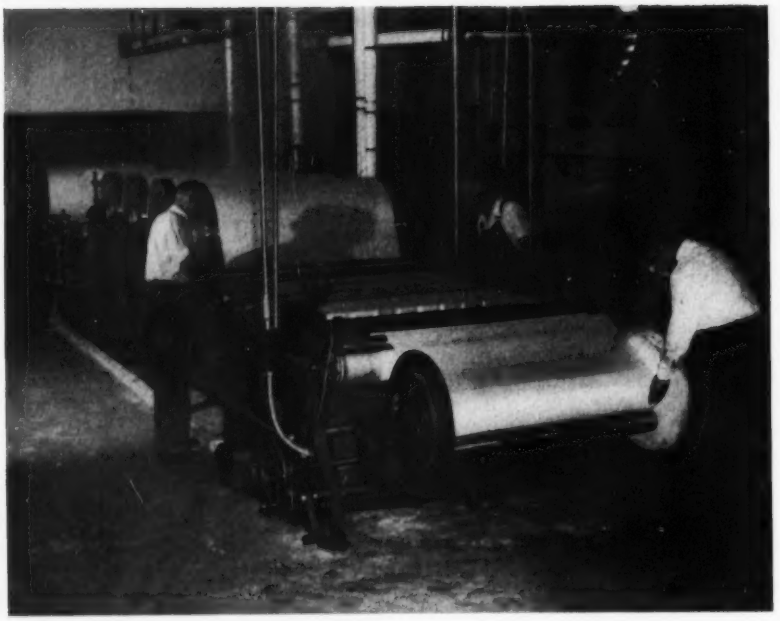
On Tuesdays and Thursdays, random samples are picked from the frames on each yarn number; the same sample size is used throughout.

If a particular yarn number is marked "out of control, heavy," the overseer usually checks the frame gears or some of the roving in the creel. If he finds nothing wrong with the machine or the roving, he usually will wait and check the next day's sample to see if the heaviness is a general condition of that yarn number. If the yarn is consistently heavy, he will most likely change the gears on those spinning frames if the corresponding roving frames have not already been corrected.

In correcting for weaknesses in yarn strength, the overseer first checks the yarn-number chart. If these indicate an "out of control," "warning region," or "continues light," the overseer changes the draft gears. If the yarn is weak and the size is good, he will check the twist gears, or the laboratory may check the cotton itself for Pressley strength and Micronaire fineness.

Out-of-control ranges are much harder to correct. They are used more as a barometer and in computations. However, if high ranges occur or persist, the back stock is often checked to make sure the roving hasn't been mixed in the spinning creels or jack-frame creels.

Get that
SCRAP
Back to WORK!



For Versatility

Choose the JOHNSON

ALL-FIBER SIZER

The Johnson sizer shown here is used to a wide variety of yarns, including:

- Bleached, dyed and mercerized cotton yarns and thread
- Dyed and twisted cotton
- Rayon and silk yarns
- Dacron, Orlon, Nylon, and the other new type yarns dyed under pressure at elevated temperatures.

FEATURES OF THIS SIZER INCLUDE:

- Double quetsch for sizing warps containing cotton, spun rayon, nylon, acetate, orlon, and other spun and filament yarns in any combination.
- Stainless steel pan and rolls provide for use of any type sizes, including starch, gelatin, or the new acid sizes.

Write for full description and particulars of the Johnson sizer for your particular sizing requirements.

Charles B. Johnson

MACHINE WORKS

PATERSON NEW JERSEY

"WHERE DO YOU GET YOUR ALKALIES, JIM?

"I ALWAYS GO TO SOLVAY *FIRST* FOR ALKALIES...*Here's why...*

REG. U. S. PAT. OFF.

SOLVAY

Soda Ash
Caustic Soda
Caustic Potash
Chlorine
Potassium Carbonate
Calcium Chloride
Sodium Bicarbonate
Specialty Cleansers
Sodium Nitrite
Monochlorobenzene
Para-dichlorobenzene
Ortho-dichlorobenzene
Ammonium Bicarbonate
Ammonium Chloride
Sesquicarbonate of Soda

••• **First off, I've found** that Solvay always takes care of its customers—in good times and bad! I know I can really depend on Solvay in a pinch.

I also like the treatment I get from the sales staff—always courteous and helpful. And it's convenient doing business with Solvay because one of their sales offices is located near me.

In addition, I feel that when I buy alkalies, I might as well get the "extras" that Solvay offers ...like the Solvay Technical Bulletins that give you the kind of information no other technical bulletins have. Same with the Solvay Technical Service staff, a group that operates on an industry-wise basis, with men who are experts in individual industries.

Then Solvay has over 200 local stock points that practically cover the country, and three centrally located plants. This makes for better delivery service.

And, of course, I know I get dependable quality and uniformity when I order from America's oldest and largest producer. That's why I always go to *Solvay first* for alkalies.

SOLVAY PROCESS DIVISION

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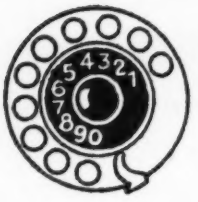
GET DIALED RECORDS OF



WHY MACHINES STOP

and you can UP production 5% or more!

←THIS REPRINT SHOWS HOW!

Telephone Dial to record WHY a machine stops.

Ready to your hand is PROOF that the CENTRALOGRAPH can not only increase production efficiency but will increase production as well to a point where the cost of installation is soon repaid.

The Centralograph is the only machine that records WHY a textile machine stops, in addition to *when* and *how long*. It does this quickly and surely.

We urge you to send today for reprint of descriptive article of Centralograph operation in an actual spinning mill, and other data. These facts will show how you can profitably use the Centralograph in your mill. This machine is easily installed, well-liked by employees, cuts operating costs in a way you may have never thought possible. Write us—or call us—today for facts on the Centralograph.

The Centralograph showing continuous time record-chart of 20 machines simultaneously.

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Install the CENTRALOGRAPH and increase production!

Preventive Maintenance

(*Continued from page 111*)

nance program. It is also his duty to sell management on the soundness and benefits of preventive maintenance.

After management approves the installation of a preventive-maintenance program, the plant engineer should sell the program in advance to his maintenance foremen before the mechanics do any actual work under the new system.

The results and success of the program depend on the coordinated efforts of everyone concerned—from top management to the mechanic who makes the inspections and does the repair work.

Plan Your Program

If you have an average plant, you can develop a sound preventive-maintenance program by basing it on these fundamental principles:

1. **Keep an equipment record.** Since best results can be obtained with complete records, take a physical inventory of all your equipment.

To properly identify each unit, assign an equipment-inventory number to each machine. This number can be stamped on a metal tag and attached to the unit for permanent identification.

The equipment-record form should indicate the number and location of the unit, all name-plate data, a description of the equipment, the serial number, the manufacturer's name and address, the purchase-order number, the lubrication data, etc.

The reverse side of the equipment record is used for a physical history of the repairs, changes made in the machine, and labor and material costs.

After the records have been kept for some time, the history of the repairs and changes will indicate whether the equipment is functioning properly on an economical basis or is too small, too weak, or of the wrong size and type for the purpose it serves.

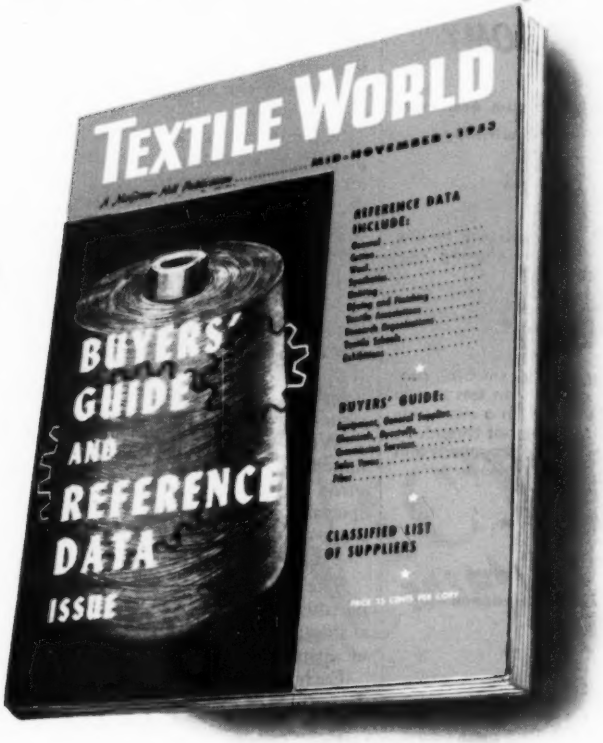
The value of the equipment record is limitless. In case of a breakdown, the plant engineer has the machine and part specifications, name and address of the equipment manufacturer, purchase order, date, etc., right at his finger tips.

2. Make preventive-maintenance inspection records.

Inspections are the most important part of the preventive-maintenance program. When the inspections are made at proper intervals, they prevent mechanical breakdowns, particularly during production periods.

Keep records of each inspection. Each record should cover a specific

Announcing . . .



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In mid-November will be published, as an extra number, the BUYERS' GUIDE and REFERENCE DATA issue. This will be crammed with useful information about machines, equipment, supplies, and services that can help you to cut costs, improve efficiency, increase production, solve problems, and make better products.

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The BUYERS' GUIDE section will carry a classified list of manufacturers of machines, equipment, chemicals, dyestuffs, sales yarn, and other supplies. It will also include sources for raw fiber. It will guide you to commission services, such as throwsters, scourers, bleachers, dyers, mercerizers, finishers, etc. And it will list architects and engineers, factors, consultants, research laboratories, textile schools, and textile associations. Because of the completeness of this section and the unusually wide circulation of the publication, the 13th issue will become the standard buying guide for use by all types of mills and by all classes of mill executives.

And, furthermore, many advertisers will take space in this issue to provide you with the data you need to specify accurately just the equipment, supplies, or services that you require to improve your job.

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● Exclusive oil cushioning. Very gentle and very effective

For Higher
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and Greater
ECONOMY

20,000 Hours and more with same oilfilling.

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No edge pressure on the rollers. No chafing corrosion.

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Amazingly smooth running results in less thread breakages, in a more uniform quality of thread. . . permits higher speeds and increased traverse.

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Minimum Maintenance

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Less power consumption.

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Built for any kind of bobbin. For twisting, spinning and throwing. For light and heavy duty.

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A product backed by a century of experience . . . For advanced requirements . . . To your specifications.

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class of equipment and contain a pertinent list of inspection points checked by the mechanic making the inspection.

3. **Use work orders.** Work orders inform both the maintenance department and management what work is to be done. The records also provide the data necessary to order materials and govern the assignment of jobs to the mechanics.

When work on a machine is completed and all entries have been made on the work order, the records serve the plant engineer in his control activities and the cost department in expense allocation.

4. **Provide maintenance time cards.** Maintenance time cards provide spaces for the mechanic's name, the regular hours and overtime he works, the clock number, the work-order number, and the nature of the assigned job.

Work orders indicate the maintenance labor on regular jobs, but time cards are the only record of labor on special work not covered by individual work orders.

5. **Use storeroom withdrawal orders.** The success of the maintenance department depends greatly upon having a storeroom with sufficient quantities of spare parts and supplies.

Each mechanic should have a withdrawal order for each part he receives from the stockroom. In a well-kept stockroom, parts are priced from data on the perpetual inventory. Parts costs on withdrawal orders on the same work order are charged to the job being done and summarized to obtain the total materials cost.

6. **Make a monthly report of preventive-maintenance inspections.** A monthly report that summarizes the inspections made and critical points found in repair work will show if the preventive-maintenance program is functioning properly. Proper progress in a program will be shown by a gradual decrease in repair jobs resulting from the scheduled inspections.

7. **Try a mechanical downtime report.** One of the best measures of the effectiveness of a sound preventive-maintenance program is the reduction of mechanical downtime.

The data listed on the mechanical downtime record are the machine-inventory number, time lost on the machine, and corrective action taken.

Each mechanic makes out a downtime report form when he services a machine that's shut down from a mechanical failure. He records the production-time loss on each report.

As mechanical downtime records are accumulated, it often becomes evident that a particular production unit is

For more information, write direct or use Reader Service post card.

Always Uniform

Thread . . . whether on a seamstress' spool or a mill spindle . . . must conform to high standards . . . inch after inch, mile after mile.

That goes for Victor Mill Starch, too. Mill men know they can depend on its unvarying quality . . . the uniform penetration, strength and smoothness it provides.

Both Victor and the Keever man who serves you, are known as "The Weaver's Friend" throughout the industry.

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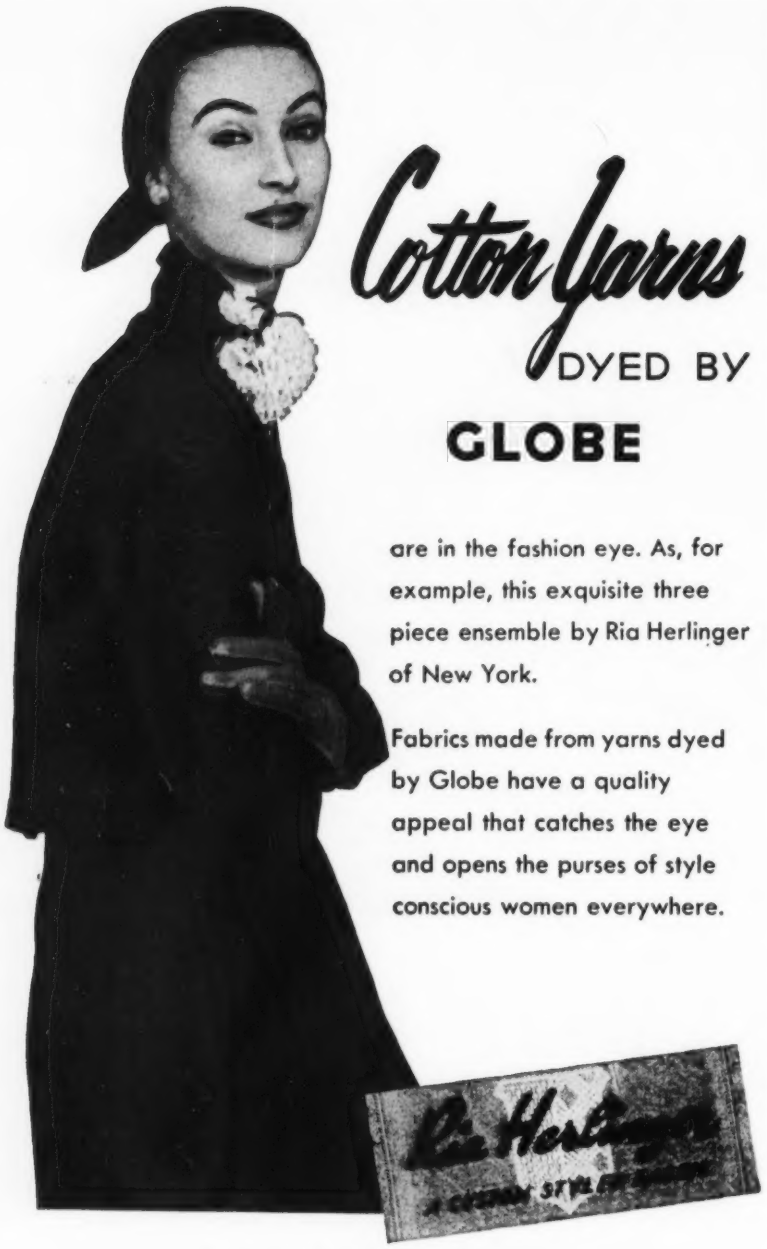
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are in the fashion eye. As, for example, this exquisite three piece ensemble by Ria Herlinger of New York.
Fabrics made from yarns dyed by Globe have a quality appeal that catches the eye and opens the purses of style conscious women everywhere.

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"YOU CAN RELY ON GLOBE"

We do package dyeing on tubes, skein and warp dyeing, warp mercerizing, and sizing.
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constantly in need of repairs and adjustments. If it appears that the cause of these shutdowns can be eliminated by overhauling the machine, the plant engineer arranges for the machine to be shut down so that all necessary repairs can be made at once.

Organized Maintenance

(*Continued from* page 113)

on the morning it's due for inspection, the department that uses the truck is notified by telephone to bring the truck to the shop.

It takes cooperation to get a truck out of service even when a standby truck is available to replace it. This cooperation can only be developed through a mutual understanding of problems and by letting other departments help in planning the maintenance program.

It isn't hard to make other departments realize the advantages of taking a truck out of production for a few hours of inspection and service when they compare this practice with the loss of several days that occurs from a major breakdown.

What If Breakdowns Happen?

No matter how complete an inspection program may be, it still cannot prevent the possibility of a breakdown or at least a minor repair job.

When these repair jobs come up, the mechanic receives from the clerk in the shop a work card with the truck number on it. The mechanic records the time he starts work on the truck at the shop time clock and marks the card again when he finishes the job.

All work done on the truck is written on the back of the card, and the mechanic gives the completed card to the clerk.

The clerk records the information on individual cards that have been set up for each truck. The mechanic is paid for the day from the charges against the department that uses the truck.

The information on the cards also furnishes data to instruct drivers and supervisors in other departments on proper practices.

Use Maintenance Records

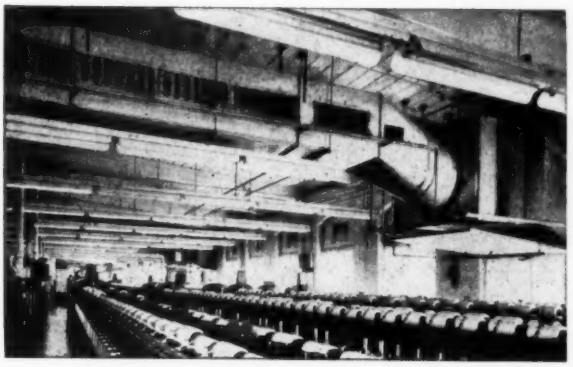
A scheduled inspection of all plant facilities is necessary for a complete preventive-maintenance program. Physical inspection alone is not enough; it's the follow-up technique of inspecting records that results in the efficient use of people and material with the consequent savings in money.

The information received from a

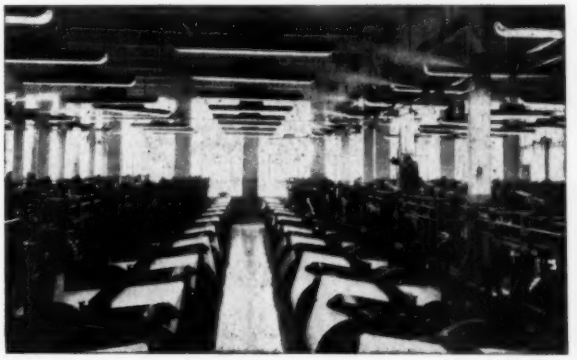
Parks-Cramer

CERTIFIED CLIMATE

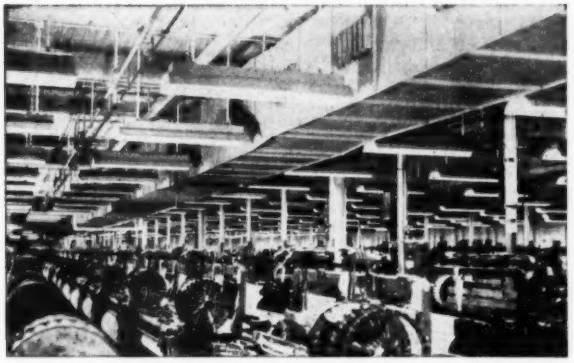
YOU know the value of closely controlled atmospheric conditions in the textile mill. OUR object is to design the best possible air conditioning apparatus and to recommend the system most suited to your requirements.



Automatic Airchanger—unit or central type.



Gradumatic Humidification.



Air Washer System—central station or ceiling type—straight or in combination with direct humidification or refrigeration.

Each system flexible and of dependable capacity.

All with Gradual Acting Psychrostat Regulation.

Engineering, manufacturing, installing by Parks-Cramer.
Complete new installations. Modernizing of existing systems.
Centralized responsibility.
Textile mill humidification and air conditioning since 1906.

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FITCHBURG, MASS. CHARLOTTE, N. C.

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See CLARK EQUIPMENT IN ACTION!

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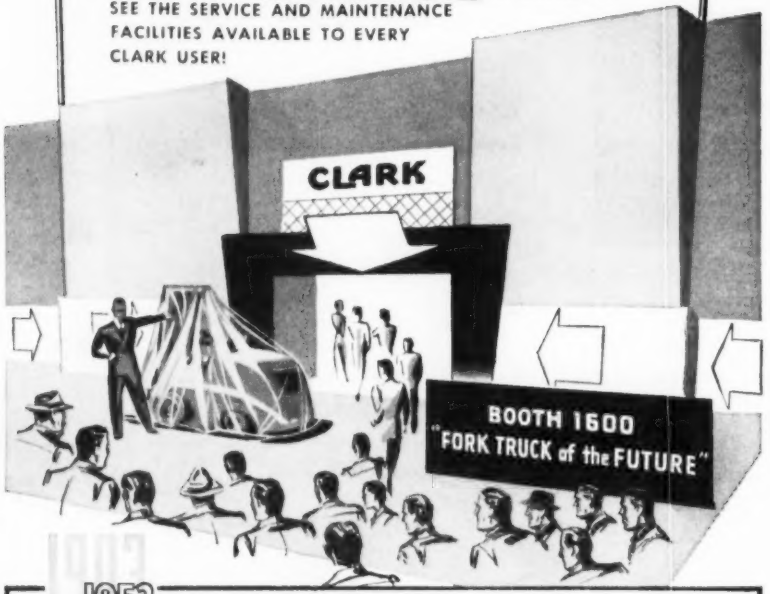

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INDUSTRIAL TRUCK DIVISION
CLARK EQUIPMENT COMPANY
BATTLE CREEK 27, MICHIGAN
WRITE FOR FREE REGISTRATION TICKETS

study of maintenance records gives details on five kinds of work performed:

1. Installation of new parts or complete machines
2. Repairs
3. Fabrication of parts or complete machines
4. Outside contract jobs
5. Modifications to equipment

The maintenance staff and supervisors use the collected data for comparative analyses to save material and manpower and to determine the effectiveness of the maintenance program and the suitability of particular types of equipment.

The records also furnish management with production unit maintenance costs.

To keep machines running, improvements must be developed in inspection and repair methods to overcome friction and stress in mechanical devices.

Building Maintenance

(*Continued from page 115*)

7. Partitions
8. Painting
9. Plumbing
10. Electrical work
11. Heating
12. Fire and safety inspections

Ordinarily air conditioning and ventilation, while still maintenance, are functions of the power department supervision and subject to monthly inspections. Janitor service is a production charge.

The three most troublesome maintenance items are:

1. Roofs
2. Floors
3. Paint

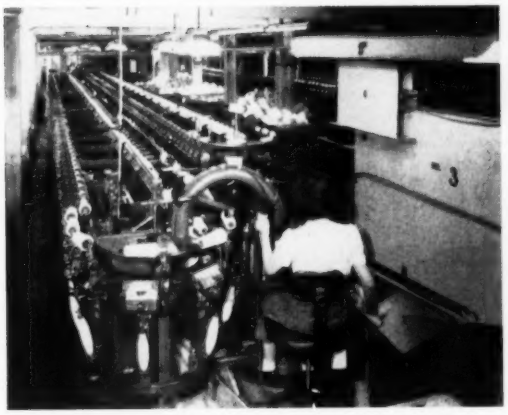
1. Roofs

The question as to what kind of roof gives the longest life and minimum trouble is frequently asked, and it would be wonderful if there were a good answer to it. There is no one type of roof that is better than another, but some roofs are more desirable than others under certain conditions. There can be good and bad tar roofs, good and bad asphalt built-up roofs, or good and bad roofs of slate, tile, or any other material.

If a good roof is laid by a first-class roofer with good material on a sound and proper base and is maintained properly after it is installed, it should give a long life with minimum trouble. The secret here, as in all maintenance problems, is in actually doing something after the inspections are made. Winter weather, heavy rains, and espe-

Complete Automatic Winding Systems for Rewound Filling

to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

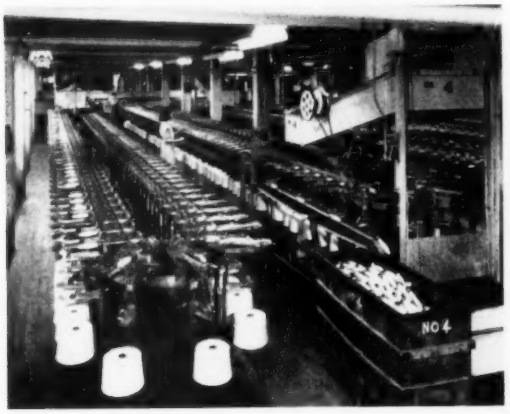


Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.



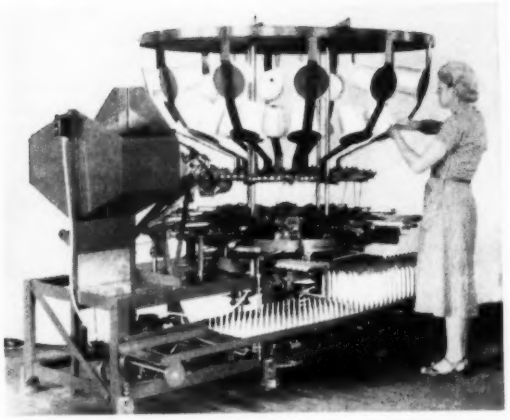
Abbott Traveling Spindle Automatic Quillers

For winding cotton, spun rayon, worsted, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

For rewinding woolen yarn from mule and ring frames.

For winding filament rayon and nylon, etc., with automatic pinboard attachment or wide belt inspection conveyor.

Production up to 2000 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

This new quiller has been developed to bring complete automatic quilling to highly diversified mills and the small mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or onto wide belt conveyor.

Production up to 2000 bobbins per hour per operator.

ABBOTT MACHINE CO., INC.

WILTON, NEW HAMPSHIRE

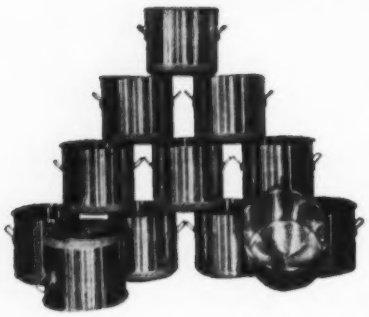
SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.

Leading Mills use GLASCO

TANKS, PAILS, STORAGE CONTAINERS

and other accessory equipment

Typical of a big line are:

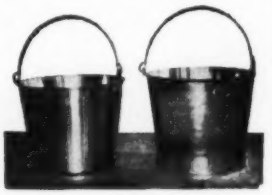


STAINLESS STEEL STORAGE CONTAINERS

— 18 gauge, polished outside, top edge doubled metal flanged out $\frac{5}{8}$" at 90°. Has 2 stainless steel tubular handles. Foot is 12 gauge polished stainless steel either spot or tack welded to container and sealed with solder. Capacities: 10 gals. (14" x 16"), 15 gals. (16" x 18"), 20 gals. (18" x 19"), 25 gals. (20" x 20"), 35 gals. (21" x 24"), 50 gals. (22$\frac{1}{4}$" x 30").

STAINLESS STEEL PAILS

drawn in one piece (seamless), with bail handles, come with or without foot—unpolished, or polished inside, or outside—or both. They run in capacities of 12, 16 or 20 quarts.



MIXING AND STORAGE TANKS

Come in four styles: flanged and dished bottom, flanged bottom—flat or pitched, disc bottom—flat or pitched, cone bottom. Capacities: 25-50-75-100-150-200-250 and 300 gallons. Two styles of pipe legs (either with floor flanges or adjustable sanitary feet)—or with platform lugs or removable stand. Tanks 25 thru 100 gallons are of 16 and 18 gauges—and from 150 through 300 gallons they are of 14 and 16 gauges (depending on style of bottom). Extras include: 1 piece flanged cover, hinged cover, and motor bracket.

Manufacturers of modern metal equipment for wet processing uses, including Dye Jig Enclosures, Dye Tubs and Becks, Wash Tubs, etc., of stainless steel and other metals that resist corrosion under most alkali and acid conditions.

GLASCO EQUIPMENT CORP.

Pioneer Fabricators of Stainless Steel Equipment

10 WAIT STREET — GLASCO PRODUCTS — PATERSON 4, N. J.

Phila. Area: Marple Organization, 1200 Commercial Trust Bldg., Philadelphia 2, Pa.

New York State: Sanders Industrial Equip. Co., 1351 Broadway, Albany 4, N. Y.

South: Henry H. Hersey Co., 44 Norwood Place, Greenville, So. Car.

New England: Harris & Underhill, 446 Statler Bldg., Boston, Mass.

cially sunshine are the worst enemies of roofs.

2. Floors

There is little question that in most cases floor troubles can be overcome by regular inspections and preventive maintenance. It is important to have the right kind of floor to withstand conditions.

Here again no one floor is a cure-all for all conditions. There are areas where concrete is the best type of floor; other areas where acidproof tile, wood, or wood block would be best; and still other areas where a floor of Mulsomatic or similar material might be more satisfactory.

It is important, therefore, that someone who knows and understands flooring be consulted to aid in the inspection of floor areas and to set up a program of preventive floor maintenance to be sure that floors will receive proper preservative treatment and care before they start to wear seriously. When maintenance is required or when replacement is necessary, the proper type of floor should be selected with the help of experts.

It requires eternal vigilance to really overcome flooring troubles in most plants, and in too many cases the management is ready to give and use some temporary expedient instead of doing the job as it should be done. The best way to have good floors is to do the best possible job of floor maintenance and not look for a cheap way out.

3. Paint

Painting also represents a large item of cost in the annual building-maintenance budget. Maintenance painting is not often given the attention that it deserves, and much money is lost by the application of improper materials or by improper application.

For each condition of exposure and service, there are optimum paint materials and systems that will give the longest paint life. Where exposure conditions vary considerably within a plant, it is impossible to obtain low-cost paint performances by using one type of paint for all applications.

Lowest painting costs can be obtained only when the proper paint materials are used in each service. Increase in protective life of over four-fold is common and can be obtained in areas of aggressive paint deterioration by the use of proper paint systems.

One of the greatest single causes of early paint failure is applying the paint too thinly to give durable and long life. For many aggressive chemical exposures a minimum paint thickness of 0.005 in. is required. In exposures of less severity, this thickness of paint

behind this trademark

FIBER PPG GLASS

The newest Fiber Glass plant in the world is Pittsburgh Plate Glass Company's at Shelbyville, Indiana. The first unit of this plant was placed in operation last autumn. Today, within less than six months, PPG Fiber Glass is available to serve the varied needs of industry for Superfine Insulation and for Yarns, Strands and Roving.

Behind this most modern Fiber Glass operation are the skills acquired in 70 years of glassmaking—plus the broad business experience and facilities which are so important in handling the requirements of customers.

If you use Fiber Glass—or contemplate its use for any application—you are invited to investigate PPG's facilities for serving you. Pittsburgh Plate Glass Company, 632 Duquesne Way, Pittsburgh 22, Pa. District Offices: Chicago, Cincinnati, Cleveland, Detroit, New York, Washington.

new research on Fiber Glass

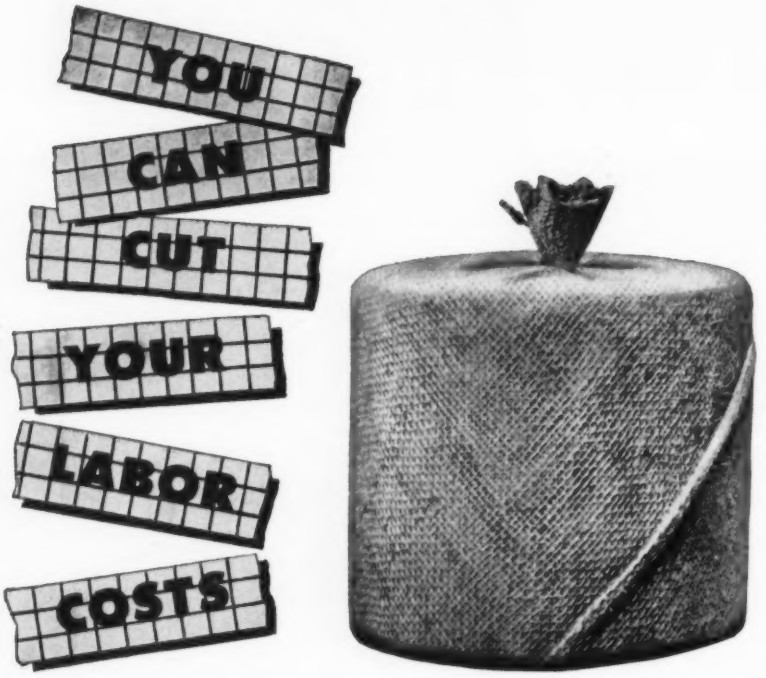
Continual research has been one of the most important factors in maintaining leadership for Pittsburgh Plate Glass Company, having been responsible for such outstanding developments as—

- the famous Pennvernon method of drawing window glass
- Carrara structural glass
- Herculite all-glass doors
- massive windows for atomic research laboratories

PPG's research will be equally important in the continued development of its newest product, Fiber Glass. Your business may be among the first to profit. Your inquiries are invited.

FIBER PPG GLASS PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

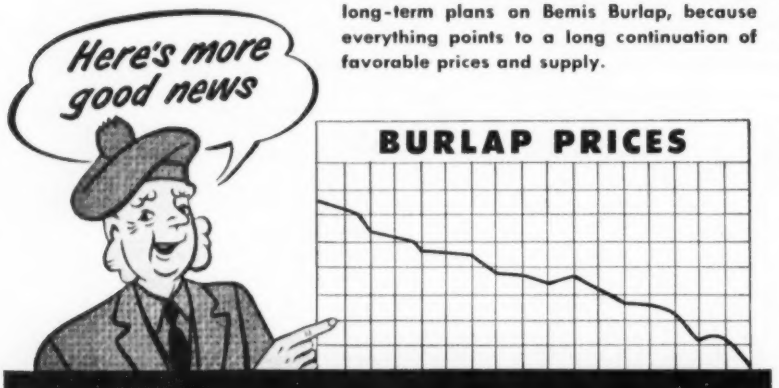


Use Bemis Tite-Fit Tubing!

Bemis Tite-Fit Tubing . . . the spiral-sewn burlap tubing with the 2-way stretch . . . is the fastest, easiest, most economical wrapping for rolls or bales of goods. Ask the Bemis Man to demonstrate.

Whatever your needs, we can furnish mixed carloads of burlap piece goods in a wide assortment of widths and weights.

Prices are down! What's more, you can build long-term plans on Bemis Burlap, because everything points to a long continuation of favorable prices and supply.



Bemis

BEMIS BRO. BAG COMPANY

General Offices
St. Louis 2, Mo.

may not be required. But for each exposure condition there is a minimum paint thickness that should not be reduced.

Paint for Protection

With the increasing availability of effective pigmentation of paints, it is easy for a painter to obtain good color coverage with paint films that are so thin that no protection of the base surface is obtained.

It is the experience of the chemical industry, for example, that the material and labor costs of applying a three-coat paint system approximates 32¢ per sq. ft. These are direct costs of labor and material and do not contain any overhead burdens.

Of this 32¢, approximately 15¢ is expended for cleaning the surface preparatory to painting. As long as the paint protection continues in good condition, the cleanliness of this surface will be equal to that condition prevailing at the time the surface preparation was originally completed. Deterioration of the surface cannot occur as long as the paint film remains intact and protective. This fact is the basis for a substantial reduction in all building-maintenance painting costs.

If every paint job, immediately after painting, is placed on a schedule of regular inspection and repair by which any initial failures in that paint application are discovered and spot-repaired, it should never be necessary to again invest money and labor in preparing the surface for further painting. The avoidance of endlessly repeating surface preparation costs will cut your maintenance painting costs in half.

On the basis of the chemical-industry averages, direct painting costs that averaged 14.3¢ per sq. ft. per year of protection have been reduced to 6.7¢ solely through regular scheduled inspection and repair.

Electrical Equipment

(*Continued from page 113*)

The removed breaker is later given a thorough mechanical and electrical overhauling to put it in first-class condition.

While the circuit breaker is being repaired, we take megger readings of the feeder cables to the shop load. A reading greater than 1,000 v. per megohm is assumed to be satisfactory.

But, if the megger reading is less than 1,000 v. per megohm, we look for trouble. In this case, we usually do the work on Sunday to have more time to do the job. To test for a low megger reading, the maintenance men open the main feeder breaker and test the

28,000,000 Cycles Proves the Durability of the Bellows Air Motor and Electroaire Valve

HERE ARE THE FACTS

As Given In A Letter

from **TAMPAX**

"In April, 1948 we installed a BEM-1 air motor with a ten-inch stroke to actuate an experimental feed on one of our machines. This machine ran continuously, sixteen hours a day on sixty pounds of air at sixty strokes per minute until November 15, 1950. At this time it was taken out, not because it was worn out, but due to a change in the design of the machine. The cylinder was still operating satisfactorily at the time of its removal.

"If my arithmetic is correct, assuming a twenty-day month, and an operating efficiency of 80% for the whole machine which we certainly obtained, this cylinder made a total of nearly twenty-eight million strokes. This seems to us quite an enviable record, especially since, while the cylinder showed signs of wear, it had still a good deal of life in it."

TAMPAX, INCORPORATED

Long life? Yes, certainly. The Bellows Air Motor is built to give long, maintenance-free service. Every component in this uniquely different air cylinder is precision-made of field-proven materials. The heads are steel forgings. Piston rod of corrosion-resistant stainless steel. Piston cups of oil-and-oxidation-resistant molded synthetic. The cylinder heavy gauge brass. The built-in electroaire valve is so carefully made that we guarantee its solenoid controls against burnout!

But long life is only a plus reason why you should buy Bellows Air Motors. The big story is what they can do for you in production . . . and why. The Bellows Air Motor is the only air cylinder with both directional valve and independent speed controls built-in. Gets away from bulky, cumbersome piping, separate valves and controls. Built-in construction means quick, positive action. No lags. No delay.

Built-in construction means accurate control, makes electrical synchronizing of air cylinder power with other machine movements much easier.

Built-in construction means you can use economical air power in high speed precision operations, and, as the experiences of thousands of users prove, with production gains that often seem incredible.

LOOK OVER THE EVIDENCE

We'd like to send you, without cost, case history studies of twenty outstanding companies in metal working, plastics and woodworking . . . Installation detail showing how they are using Bellows Air Motors and other Bellows "Controlled-Air-Power" Devices and what they are accomplishing. Write Dept. TW 453The Bellows Co., Akron 9, Ohio.

The Bellows Co.

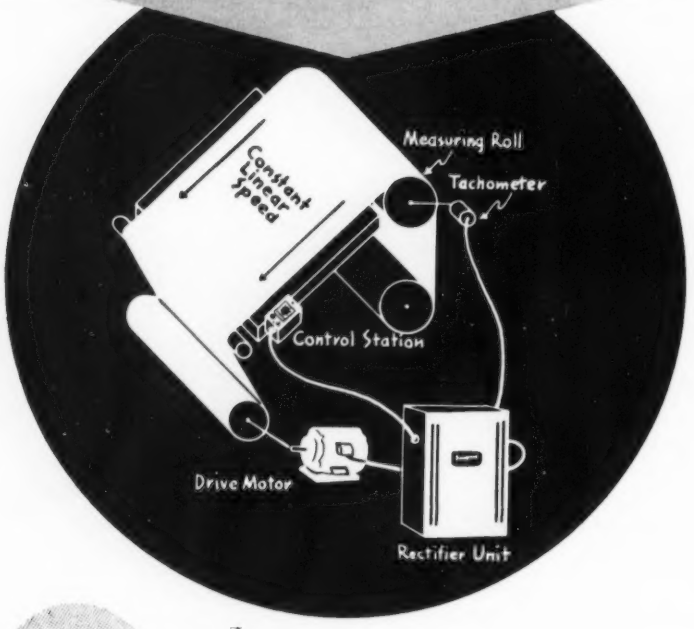
ESTABLISHED 1911

AKRON 9, OHIO

1338

"CONTROLLED-AIR-POWER" FOR FASTER, SAFER, BETTER PRODUCTION

Servospeed Constant Speed Winder



HERE'S HOW IT WORKS

. . . for Textile Inspection Tables and other constant surface speed applications

A small precision tachometer generator is used to sense a minute change in material surface speed so that the motor speed changes to restore or hold preset selected surface speed. Thus a constant linear feet per minute of material speed is achieved even though the radius of the windup roll increases with each turn to otherwise increase the linear speed versus radius buildup. The surface speed is now maintained constant by automatically reducing core speed. Optimum inspection speed may now be used for the entire inspection period with built in acceleration control preventing tension extremes at start of period.
Available for inspection tables in ¾ horsepower models for 220, 440 or 550 volt 60 cycle operation.

Other models of electronic motor speed control systems available from 1/50th to 3 horsepower.

Servospeed
DIV. of ELECTRO DEVICES, Inc.
4 Godwin Ave. Paterson, N. J.

feeder from point to point until the defect has been located and repaired. Thus, a serious power outage is averted by repairing the damage before the breakdown occurs.

This example is just one of many cases in which we save many hours of work stoppages and valuable electrical equipment by simply repairing the defect before it causes trouble.

Inspect Generating Equipment

The frequency of these inspections depends upon the nature of the equipment. Our schedule is arranged to inspect and clean all major generating and distribution equipment every 6 mo.

Until recently, we were troubled by electrolytic action on our lead-sheathed power cables in underground ducts. Most of the trouble was caused by grounded equipment on the 250- to 500-v., d.c. system.

To simplify maintenance on lead cables, we installed a permanent recording ammeter in the power house between the neutral cable and an earth plate. Normally, we're now able to hold the ground return current as low as 10 amp. When this current becomes excessive, our maintenance men isolate the various feeders to locate and repair the faulty equipment.

Increase Lighting Efficiency

Through scheduled cleaning and new methods, we have been able to increase the light output of fluorescent lamps and also reduce the cleaning costs.

Lamp maintenance is usually made by a team of two to four men. One man on a ladder removes the lamps and louvers and passes them to the men on the floor. The men on the floor clean the equipment in tanks.

Until about 6 mo. ago, it took about 15 min. to properly clean a single unit containing four 40-w. lamps and a louver. Most of this time was spent in cleaning the louver.

We now use an electrolytic cleaning compound that is recommended for cleaning chemical glassware. The detergent is mixed (1 lb. of cleaning compound to 40 gal. of water) in a shallow tank.

The louver is slushed in the tank for about ½ min., the excess water is shaken off, and the louver is reinstalled in the fixture while it's still out.

Lights cleaned by this method are sparkling clear. But if the detergent concentrate is stronger than 1 lb. of cleaning compound to 40 gal. of water, the louvers will turn a dirty brown.

End the Flickering Problem

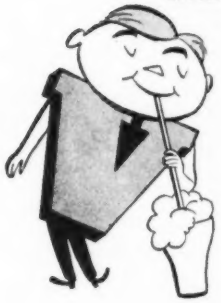
Another problem — flickering — in in the maintenance of fluorescent

For more information, write direct or use Reader Service post card.

When COMFORT counts... remember Vicara®

ZEIN FIBER

A lot of people these days are just plain *uncomfortable* in some of their clothes. *Socks make their feet feel clammy. Shirts are too hot or too cold. So are suits and dresses.*



But none of these unpleasant things happens—*if there's enough Vicara in the blend!* Vicara absorbs moisture... Vicara exceeds all other new man-made fibers in moisture regain and water retention... Vicara soaks up perspiration.

Any way you say it, Vicara *means comfort.*

And because Vicara can absorb large quantities of moisture, it is an anti-static fiber. Vicara actually dissipates static. Gets rid of it.

The moisture absorbency of Vicara—plus its anti-static quality—are important extras. But that's only the beginning. There's the soft, comfortable feel of this new luxury fiber... non-irritating, non-scratching, gentle to the most sensitive skin. There's its lightweight warmth... enduring wear... high resistance to pilling, moths and mildew.

Watch your customers welcome Vicara *in hosiery, knit goods, suits, dresses, sports clothes, upholstery fabrics, blankets and knitting yarns.*

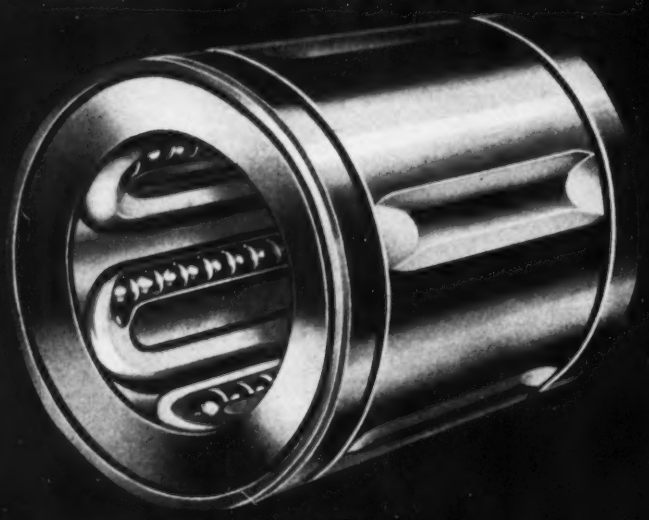
Vicara®

THE FIBER THAT IMPROVES THE BLEND

UNIFORMITY • BEAUTY • VERSATILITY • ECONOMY • EASE IN USE • SPINNABILITY
DYE-ABILITY • WARMTH • HANDLE, FEEL AND DRAPE • ELASTICITY • RESILIENCE
ABSORBENCY • HEAT RESISTANCE • WASHABILITY • NON-FELTING • NON-ITCHING
NO ODOR • NO KNOWN ALLERGIES • MOTH RESISTANCE • MILDEW RESISTANCE

Fiber Division • Virginia-Carolina Chemical Corporation
Richmond 8, Va. • 500 Fifth Avenue, New York 36, N.Y.

BALL BUSHING



The BALL BEARING for your

LINEAR MOTIONS

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS!

Now manufactured for 1/4", 1/2", 3/4", 1", 1 1/2" and 2 1/2" shaft diameters.

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Progressive Manufacturers Use Ball Bushings
—A Major Improvement at a Minor Cost

THOMSON INDUSTRIES, Inc.

Dept. M MANHASSET, NEW YORK

Write for descriptive literature and the name of our representative in your city.

Also manufacturers of NYLINED Bearings — DuPont NYLON within a metal sleeve—for rotation and reciprocation.

lighting has given us a lot of difficulty, but we now have the cure. Flickering is a twofold problem:

1. The disturbing effect on employees
2. The hazard of burning out the ballast caused by excessive starting current

Flickering has been entirely eliminated by the addition of no-blink starters that automatically cut off offending lamps when the current is excessive. Usually excessive current is caused by flickering lamps or lamps that are near the limit of their life.

A flickering lamp is readily noticeable, and, in contrast, one or more extinguished tubes are not noticeable. We now plan to disregard most calls to the maintenance department for replacing burned-out lamps and plan to replace the lamps only on cleaning schedules. Just how well this plan will work out depends on our future experience.

Plastic Louvers Build Static

Another trouble in fluorescent lighting developed in the cleaning of plastic louvers. Our plastic louvers gave no trouble until they were cleaned the first time. They were cleaned with soap and water and dried with a cloth. About 2 wk. later they were as dirty as if they had been in service for 4 mo.

Drying loaded the louvers with static electricity that actually sucked dirt to the surface. Since that experience, we wash the louvers in a solution containing a soapless powder, rinse them in a clear-water bath, and hang them while they're still wet.

Keep Lamp Voltage Constant

It's important that lamps be burned at their rated voltage. Overvoltage operation will result in higher wattage, higher efficiency, and higher light output—but lamp life will be shorter.

Undervoltage burning increases lamp life but causes a reduction in wattage, efficiency, and light output. A voltage of as little as 5% below normal results in a loss of light amounting to more than 16% with a savings in wattage of only 8%.

Since lamp cost is always small in comparison with the cost of power to operate the lamp, the increased lamp life that accompanies reduced voltage does not compensate for the loss in lamp output.

Maintenance of the proper voltage is therefore an important factor in obtaining good performance from lighting installations.

Increase Lamp Life

The life of a fluorescent lamp is affected not only by the voltage and current supplied to it but also by the

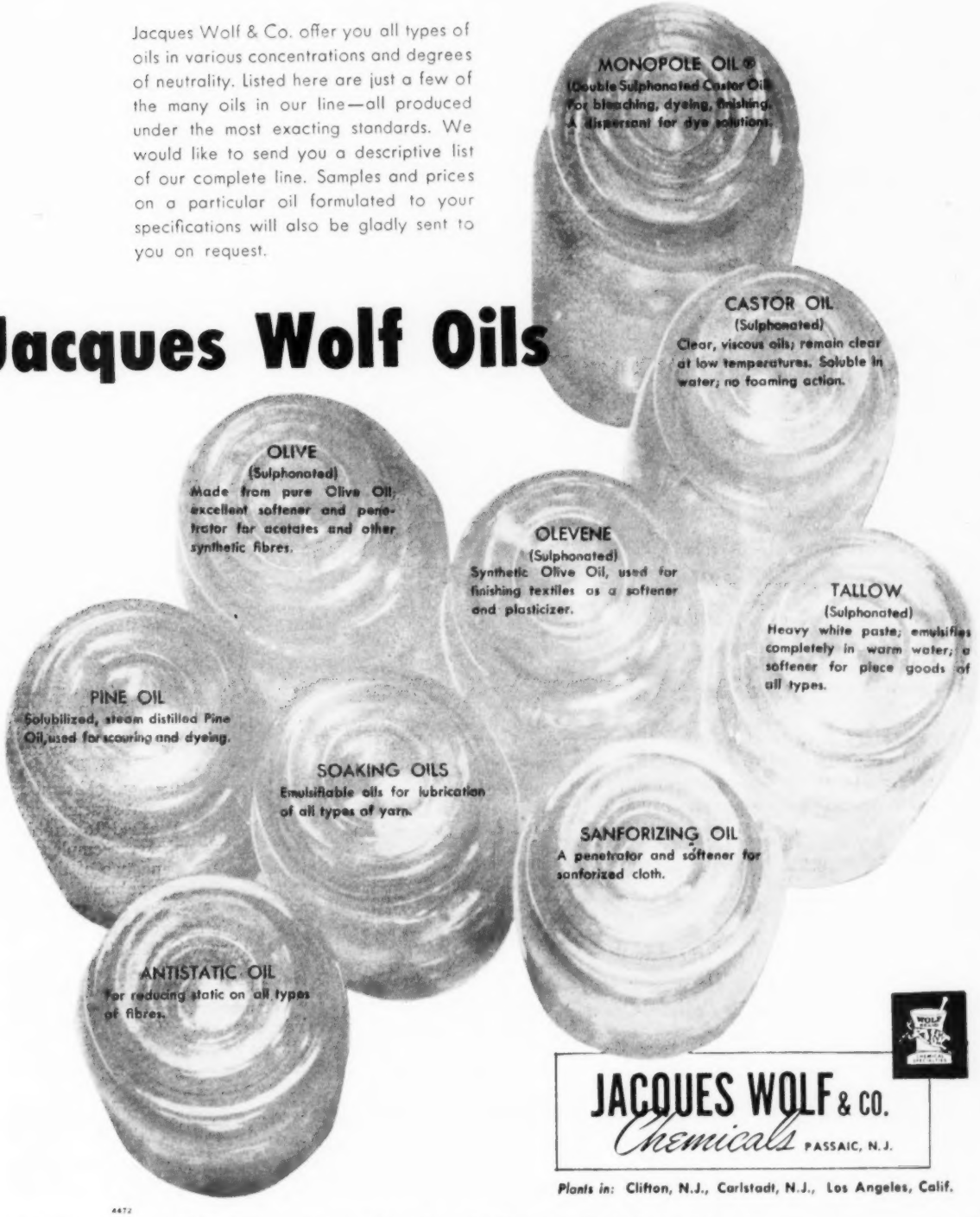
From any point of view

...the right oil

for every textile processing need

Jacques Wolf & Co. offer you all types of oils in various concentrations and degrees of neutrality. Listed here are just a few of the many oils in our line—all produced under the most exacting standards. We would like to send you a descriptive list of our complete line. Samples and prices on a particular oil formulated to your specifications will also be gladly sent to you on request.

Jacques Wolf Oils


MONOPOLE OIL®
(Double Sulphonated Castor Oil)
For bleaching, dyeing, finishing. A dispersant for dye solutions.
CASTOR OIL
(Sulphonated)
Clear, viscous oils; remain clear at low temperatures. Soluble in water; no foaming action.
OLIVE
(Sulphonated)
Made from pure Olive Oil, excellent softener and penetrator for acetates and other synthetic fibres.
OLEVENE
(Sulphonated)
Synthetic Olive Oil, used for finishing textiles as a softener and plasticizer.
TALLOW
(Sulphonated)
Heavy white paste; emulsifies completely in warm water; a softener for piece goods of all types.
PINE OIL
Solubilized, steam distilled Pine Oil, used for scouring and dyeing.
SOAKING OILS
Emulsifiable oils for lubrication of all types of yarn.
SANFORIZING OIL
A penetrator and softener for sanforized cloth.
ANTISTATIC OIL
For reducing static on all types of fibres.

JACQUES WOLF & CO.
Chemicals PASSAIC, N.J.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

4472

CONSOLIDATED TEXTILE reports:

FIRES DUE TO TRAMP IRON ELIMINATED IN ROVING WASTE MACHINE CONVERTER

***ERIEZ* Permanent Magnetic Separators Remove ALL Tramp Iron From Waste Cotton**

Two Eriez permanent (non-electric) plate-type magnetic separators, installed on the feeding line of a roving waste machine converter, are removing practically *all* spinning travelers and other tramp iron from re-workable waste cotton at the Consolidated Textile Co. Inc., Lynchburg, Va. During the three years prior to the installation of the Eriez equipment, *six* fires started in the waste machine from sparks generated by tramp iron striking against the machine's rotating beaters. These fires resulted in $1200 damage to the machine and materials. Since the Eriez installation there have been no fires caused by tramp iron, and the life of the beater lags has been materially increased!

Eriez permanent (non-electric) plate-type magnetic separators are the most economical and efficient means of removing stray iron and steel from *all* wet or dry fibers. They prevent the entry of tramp iron into openers, beaters, garnetts, cards and other expensive processing machinery . . . eliminate the possibility of steel striking sparks and setting destructive fires!

Here are 5 features exclusive with Eriez magnetic separators:

1. Riveted construction adds rigidity . . . increases structural strength.
2. Continuous hinge means easy, permanent installation.
3. Cover adds to longitudinal stiffness . . . prevents tampering and accumulation of iron on backs of castings with consequent shorting of magnetic circuit.
4. Insulation confines magnetic strength to working surface . . . no bleeding to surrounding areas.
5. Flush air gap prevents gathering of fine iron which can short out magnetic field.

Write today for FREE 6-page Bulletin 563 which describes all Eriez magnetic separator installations for the Textile Industry.

ERIEZ MANUFACTURING COMPANY

11 Magnet Drive • Erie, Pennsylvania

Nine Out of Ten Textile Mills Specify ERIEZ

number of times it is started. Electron-emission material is "sputtered" from the electrode continuously during the operation of the lamp and in particularly large quantities each time the lamp starts.

Since the normal end of lamp life is reached when the emission material is consumed from one of the electrodes, lamps will last longer if they're started the fewest number of times possible.

The rated average life of a 100-w., T-17, 60-in. lamp is 2,500 hr. on a 3-hr. start, 4,500 hr. on a 6-hr. start, or 6,500 hr. on a 12-hr. start.

In maintenance of all electrical equipment, routine inspection is the most effective way of preventing serious power outages and work stoppages

---

Textile-Plant Maintenance

(*Continued from page 111*)

▶ We maintain 5,000 sq. ft. of hardwood flooring in our plant with the complete Tennant system. Housekeeping is important with us, but our biggest gain in floor maintenance comes from accident prevention as a result of well-kept floors.

▶ Our Tennant system of floor maintenance results in beautiful floors at our plant. We're proud of our floors and the general appearance of the plant.

The floors have also affected the quality of our products and reduced our waste costs. We make felt in large rolls. Often it's necessary to place one or these rolls on the floor; we can now place a roll of felt on the floor without danger of soiling it.

Along with the reduction in waste, we also have a reduction of floor-maintenance costs because we have eliminated labor formerly used to scrub floors.

▶ We changed from our old scrubbing system to the Tennant system of maintaining floors. We had 16 scrubbers; now we have only seven employees in the new system and two of these are still employed as scrubbers in special areas.

We're interested in our steel-wool costs. They were $6,000 last year.

How often should floors be resealed?

▶ We usually reseal our floors in hard-wear areas after 25 or 30 buffings. In other areas, we buff the floors once each month and reseal them once each year.

Which floor is best for textile plants—grooved or square-edged?

▶ We believe we get best results in both wear and in case of replacement

For more information, write direct or use Reader Service post card.

When there's a BIG bearing job to do . . .

Textile manufacturers are working their machines faster, harder and longer to meet the demand for more and better yarn and cloth at less cost. It means that machines and their component parts have a bigger, tougher job to do. Keeping pace with this job are Hyatt Roller Bearings. Specified throughout the years by builders of looms and other equipment, Hyatts are still leading the way—meeting these greater demands with advanced methods of manufacturing modern heat treatment and rigid inspection from raw materials to finished bearings. As a result, Hyatts virtually eliminate friction, reduce wear and help machines to operate faster and longer. There's a size and type of Hyatt Roller Bearing for every application. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

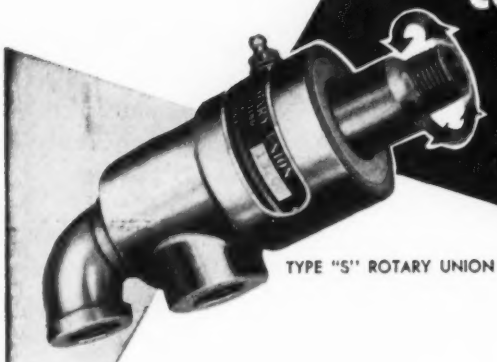
HYATT ROLLER BEARINGS

For more information, write direct or use Reader Service post card.

ROTARY UNION

(REG TRADE MARK)

a revolving steam connection



PIPE SIZES 1/4" THROUGH 3"

TYPE "S" ROTARY UNION

"Not one Burp all Year"

This was the pleased and surprised remark of a new customer who installed ROTARY UNIONS on his slashers. We were pleased but not surprised because ROTARY UNIONS are *guaranteed* to give perfect service for one year without mechanical maintenance of any sort*, and many run three years or more without any attention.

Get rid of your Saturday morning repair headaches and week-day tinkering and downtime on old fashioned stuffing boxes, packing joints, or ordinary steam connections. Install ROTARY UNIONS on your slashers, dry cans, calenders, printing, or coating machines, and you will be pleased and surprised too.

Contact our nearest office or write Dept. 4W for our Catalog.

* Make good on this guarantee is requested on less than 8 out of every 1000 units sold.

"Where *Good Connections* Count" ®

PERFECTING SERVICE COMPANY

332 Atando Avenue (Home Office and Factory) Charlotte, N.C.

Atlanta, Chicago, Cleveland, Philadelphia, Providence, New York, Montreal, Toronto

when we use square-edged flooring with matched ends.

How can a hardwood floor be made waterproof?

► We have solved that problem in our plants. We used to have leakages over our card room that often ruined card clothing worth $500 each.

It cost us 50¢ per sq. ft. to waterproof the 30-yr.-old oil-soaked floor over a card room.

We first dusted the floor with cement to remove the oil and then removed the flooring.

We mopped the decking with a liquid asphalt compound, put down roofing felt, and mopped it down. Over this, we placed scraps of 14-oz. army-type duck and mopped it with a plastic-type compound.

Last we replaced the old flooring. This flooring does not leak.

How long should a maple floor last in a spinning room?

► There's no answer to that one. However, the life of the floor can be extended if diagonal flooring is used in the trucking alleys.

► Floor maintenance—the type that saves floors—is too young in the textile industry to know just how long a floor should last. As a comparison, though, some floors in the baking industry have been maintained properly since 1934, and floor replacement has been cut 90%.

AIR CONDITIONING

What is your method of maintaining atomizers?

► We have thousands of old-type atomizers in our plant. Their maintenance is expensive in that each plant, and often each large department, employs a man on each shift to constantly clean the heads and screens.

Screens are 20 mesh. The air pressure is 25 psia. at each head.

The two most common and most troublesome problems in atomizer maintenance are carbon and corrosion in the pipes.

Carbon is caused by overoiling the compressor. We were using six drops of oil per minute and eliminated most of our carbon by cutting the oil to two and a half drops per minute in a 9x12 compressor.

We're still living with the corrosion problem. We tried chemicals in our water to keep the return lines clear, but the chemicals ate up the pipes.

A softener-type cleaner in the water reduces the corrosion to some extent.

► Blowing out the pipes once each year helps keep the lines open.

What relative humidity do you maintain in spinning and weaving?

► On most cotton work, we attempt

FROM BOLL TO BOLT

use ENERGETIC for detergent economy and efficiency

ENERGETIC is a powerful, concentrated non-ionic detergent that combines high soil removing and soil suspending ability, preventing redeposition on the goods. Because it is supplied 90% active, the quantity of ENERGETIC required to do a specific job will seldom exceed ⅓ of the conventional anionic material requirements. When desired, builders may be added, further reducing your scouring costs.

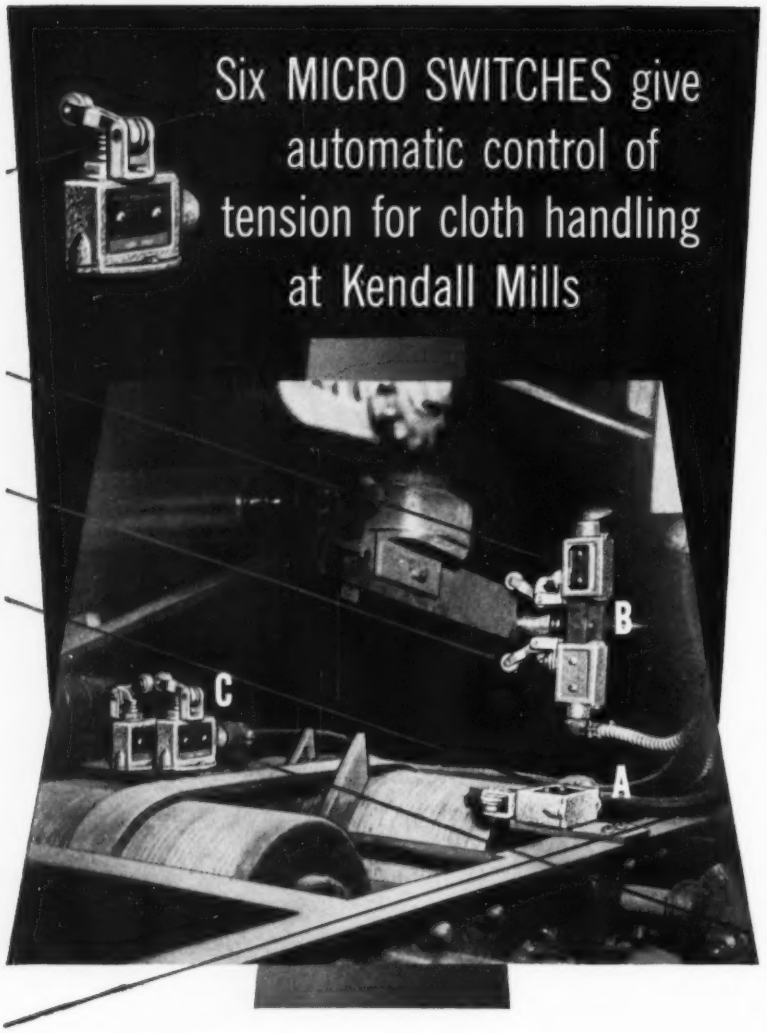
ENERGETIC is outstanding as a detergent for use in kierboiling, jig scouring and dyeing, package scouring and soaping off, dye levelling, soaping off naphthols, wool skein scouring, raw wool stock scouring and some other washing operations. ENERGETIC will prove in its first test in your mill how economical and efficient it is. Its essentially neutral character, the almost complete absence of salts, its stability in acid and alkaline solutions, and its controlled suds characteristics make ENERGETIC extremely valuable for textile washing operations. And it's completely compatible with anionic or cationic finishing agents, soaps and oils. It is available in 30 and 55-gallon steel drums, and also in 5-gallon containers. Contact your local Armour Industrial Soap representative or write Armour's Industrial Soap Department for further information on ENERGETIC – the proven textile detergent.

ARMOUR *Industrial Soap Department*

Armour and Company • 1355 West 31st Street • Chicago 9, Illinois

 For more information, write direct or use Reader Service post card.

Six MICRO SWITCHES give automatic control of tension for cloth handling at Kendall Mills



As every textile mill operator knows, constant tension is an important factor in the handling of cloth.

Six MICRO switches assure this constant tension on the cloth handling machine at the Oakland Mill, Newberry, South Carolina, which is one of the seven mills of Kendall Mills, Charlotte, North Carolina.

Two switches on each side of the machine, (one shown A) prevent overrun of the lead screws as a result of shifting of the belt on the cone pulleys. Two others (B) keep the dancer roll within specified upper and lower limits to keep the tension within control of the machine. The third pair of switches (C), actuated by a bar attached to the dancer roll, modulate the speed of the variable speed motors to fit the position of the dancer roll.

This use of MICRO switches by Kendall Mills is typical of the way in which plant operators in the textile industry are using MICRO switches to make their present plant equipment, safer, more automatic, and more productive. Consult your nearest MICRO distributor for help in selection of switches best suited to your requirements. Further information is also available from your nearest MICRO branch office.

MICRO A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

MAKERS OF PRECISION SWITCHES

FREEPORT, ILLINOIS

to hold our moisture content to 65% r.h. in spinning and 80 to 85% r.h. in weaving.

What are your troubles with window units?

▶ Window units in our air-conditioning system become clogged with dirt and lint which accumulates on the blades and tears them up.

The only answer to this problem is to set up regular cleaning cycles.

What is your experience with dry-duct air-conditioning systems?

▶ We have only one dry-duct system in our 15 plants. We don't like this system at all. Troubles occur at the atomizers because the strainers clog up and the heads corrode.

This system also causes excess precipitation in high-humidity areas. The walls in these areas are always wet with sweat.

How do you like wet-duct systems?

▶ We are partial to this system. A few problems are connected with them, but they're more satisfactory to us than central stations.

The filtering problem is constant, of course, but it isn't too serious.

Cleaning is the big problem. We have a small man go inside the ducts and clean them periodically.

Galvanized-metal ducts rust out and have to be replaced every 5 yr. As these ducts rust out, we're replacing them with stainless-steel or copper ones.

We paint the copper ducts with white paint to keep our buildings looking attractive. The paint is applied right to the wet surfaces.

▶ We paint our ducts with wax, and our rusting problem is all over. The wax costs 10 or 11¢ per lb. and has a melting point of 140 to 160° F.

The wax is melted and applied to the duct surface with a paint brush. Then the wax is painted with common paint. This treatment ends the painting problem too.

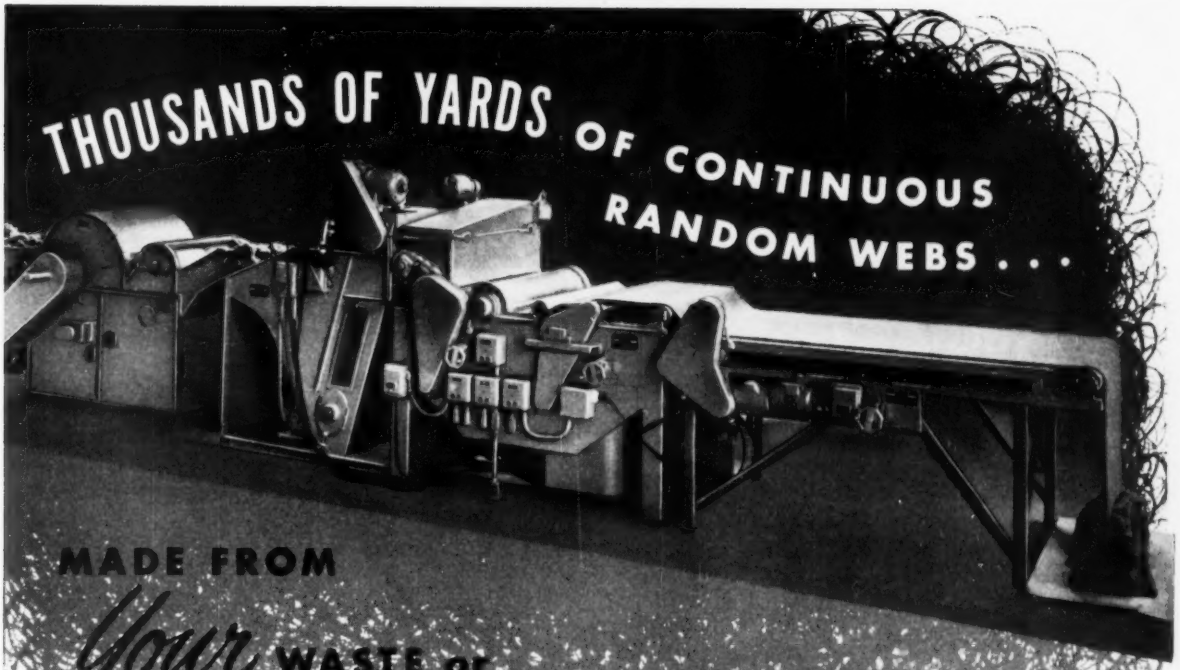
▶ We find the wet-duct system the most flexible of all systems used.

What problems do you have with central-station air-conditioning systems?

▶ Our first problem with central stations is that the relative humidity of a building cannot be economically raised higher than 65%. Then the air washers have to be supplemented with atomizers or humidifier heads.

▶ The ducts in this system can be waxed with the same results as with the wet-duct system.

▶ Fan-blade maintenance is one of the most expensive items in the maintenance of central-station systems. We



MADE FROM *Your* WASTE or STAPLE FIBERS with

RANDO-FEEDER AND RANDO-WEBBER

NEW PROFITABLE PRODUCTS

Research work on new products is keeping pace with the many types of non-oriented webs produced by the RANDO-FEEDER and RANDO-WEBBER. In the past few months a number of new products have come on the market. Because non-oriented webs have strength in all directions, resilience, resist delamination and splitting . . . have a wide range of weights and thicknesses (from ½ ounce to 20 ounces a square yard, from paper thin to 2 inches depending on the fiber used) many types of product are possible. Research work now under way promises the introduction of many new materials, some of which may not even be recognized as textile products.

Your waste and staple fibers can make additional profits for you.

WRITE for NEW Bulletin No. 102. Inquiries are welcome.

TEXTILE DIVISION
CURLATOR
CORPORATION
EAST ROCHESTER, NEW YORK

 For more information, write direct or use Reader Service post card.

This NEW CONSTRUCTION Revolutionizes Swivel Casters!

LOCK-WELD

Built Stronger · Last Longer

Fairbanks'® great new swivel caster

LOCK-WELD CONSTRUCTION (patented) MEANS

NO KING PIN — completely eliminates the greatest single cause of caster failure: the king pin.

EASIER SWIVELING — double ball race held in rigid alignment. Tremendous increase in swiveling efficiency.

SUPER STRENGTH — top plate and retaining plate are projection welded into an integral unit. No wear between rigid and moving parts. Patented leg design prevents bending and buckling...disperses load over larger area.

COINED RACEWAYS · HARDENED BALL BEARINGS · PRESSURE LUBRICATION

Complete information on LOCK-WELD casters is contained in Bulletin 23-33, free on request.

THE **Fairbanks** COMPANY

393 LAFAYETTE STREET · NEW YORK 3, N. Y.

Branches:
New York 3 · Pittsburgh 25 · Boston 10 · Rome, Ga.

VALVES · DART & PIC UNIONS · TRUCKS · CASTERS

spent four days of work and $1,500 metallizing a fan during the Christmas holidays. The fan has a capacity of 85,000 cfm. We're going to watch this fan closely; and if it is satisfactory, we'll metallize others.

► Rubber-coating the blades is not satisfactory. Coating doesn't last long.

► We're running a test on one blade we treated with automobile undercoating material. It's too early yet to know the results.

How do you like refrigeration?

► We have only one unit that is refrigerated, and we're saving $10,000 per yr. on fuel bills for heating. The motors and lights in the room give us all the heat necessary to maintain the proper temperature in winter.

Does anyone use the modulation system?

► We have this system in two or three of our plants. The system is entirely new to us. In one plant, we have two of these systems working together. A large one operates constantly, and a small one runs intermittently and serves as a booster.

With this system, we have to heat the air in the winter to reduce the relative humidity in the plant. We have installed heaters for this purpose.

What troubles do you have with air compressors?

► Condensation in the air lines is our biggest problem. To correct this trouble, we use aftercoolers on compressors of any appreciable size.

We also keep the temperature of the water at 70° F. or under to reduce condensation. Water hotter than 80° F. will result in excess condensation in aftercoolers, Compressor-water leaving temperature should be 135° F.

► If outside air is used in the compressor rather than inside air, the air-compressor capacity will be increased by 10%.

► We use a forced-cooling tower on one compressor. This system saves us 25-million gal. of water per yr.

► Up here in the North or East, we really have a condensation problem in the winter. The water temperature is 30° F. We use thermostatic controls to raise the water temperature to 70° F. It's quite a problem to stop all condensation.

► We have the answer to the condensation problem.

We drilled a 6-in. well 208 ft. deep at a cost of $6 per ft., for a total cost $1,248.

A 5-hp. motor pumps 150 gal. of water per min. In case of water or motor failures, the water line to the compressor is connected to the city line.

All the compressor storage tanks are

"Charlie—what do you suppose happens to boys who don't use **Swift's Soaps?"**

Our customers tell us that Swift's Soaps save time and money in textile operations. There are many good reasons why you, too, will find the right soap in Swift's complete line.

Swift's Soaps have excellent physical form . . . proper uniformity of composition.

Swift's Soaps perform outstandingly in dyeing, fulling, scouring and other specialized operations.

Swift's Soap line is complete . . . there's a *right* soap product for every textile need.

Swift's Soaps are backed by our years of specialized experience and research. We're ready to put all our resources to work to help solve particular soap problems.

Swift's Soaps are sold from coast to coast with distribution points strategically located to assure prompt delivery of these and other fine Swift's Soaps!

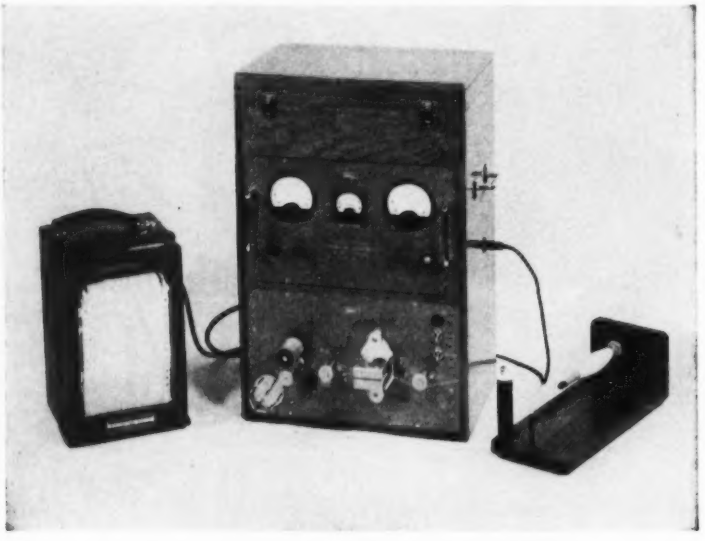
Vertex Flakes • 557 Flakes • White Ribbon Chips • Wool Flakes

Call **SWIFT** first for **SOAPS**

SWIFT & COMPANY
Soap Department, Chicago 9, Illinois

Fielden INSTRUMENTS AND CONTROLS

Stability of Setting Assured with FIELDEN YARN EVENNESS RECORDER AND INTEGRATOR



Because of its inherent electrical stability it is only necessary to set a Fielden-Walker Yarn Eveness Recorder and integrator once a day, instead of every 15 minutes or less.

On one setting, you can run hours of testing and know you are always "on the beam".

Integration is built in—true integration from multiplying the readings of two meters. No correcting charts are required.

Check on these features:

- *Extreme simplicity* of operation.
- *Excellent stability* and freedom from drift.
- *Wide range* from heaviest slivers to finest yarns and filaments.
- Absolutely exact zero setting and perfectly linear scale of indication against mass.
- *Inbuilt integration* of level and mean deviation.
- *Flexibility.* A remote electrode head can be provided for direct test at the frame.
- Reasonable price.

Write for full description as applied to your own requirements.

Fielden INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS CO.
2920 North 4th Street • Philadelphia, Pa.

outside the plant. An air duct is built to the height of the building.

Both electric and mechanical filters are used to keep out foreign matter.

This setup is perfect—and it's nice to see waste water running down the storm sewerage without any worries.

ROOFING

Which do you prefer, asbestos or composition shingles, for tenant-house roofs?

► We have a lot of houses covered with asbestos shingles. The shingles are all right until they're walked on by painters or masons; then they're broken and have to be replaced.

We're replacing all these roofs with composition roofs as fast as they wear out.

Composition roofs have to be replaced about every 10 yr., but they don't give any trouble during that period.

We apply composition roofs right over the older composition roofing where the building is strong enough. When we reroof a house that has two layers of roofing, we remove both layers.

What is your first choice of roof for industrial buildings—built-up or tar-and-gravel roofs?

► Both roofs have their good and bad points. Built-up roofs are more expensive in our area; they cost about $75 per square.

Tar-and-gravel roofs cost $50 per square. When we have our own maintenance men replace our tar-and-gravel roofs, we reduce our costs by one half. Then it's only about $25 per square.

► A bonded roof has one advantage: it's guaranteed for 20 yr.—2 yr. by the roofer and another 18 yr. by the roofing manufacturer. Here's one thing to watch, though: a guarantee is no better than the companies who do the work and supply the material. If you aren't careful, you can get in the middle of a seesaw with these two outfits—and end up with a leaking roof.

► Before applying a built-up roof, use a preservative on the decking.

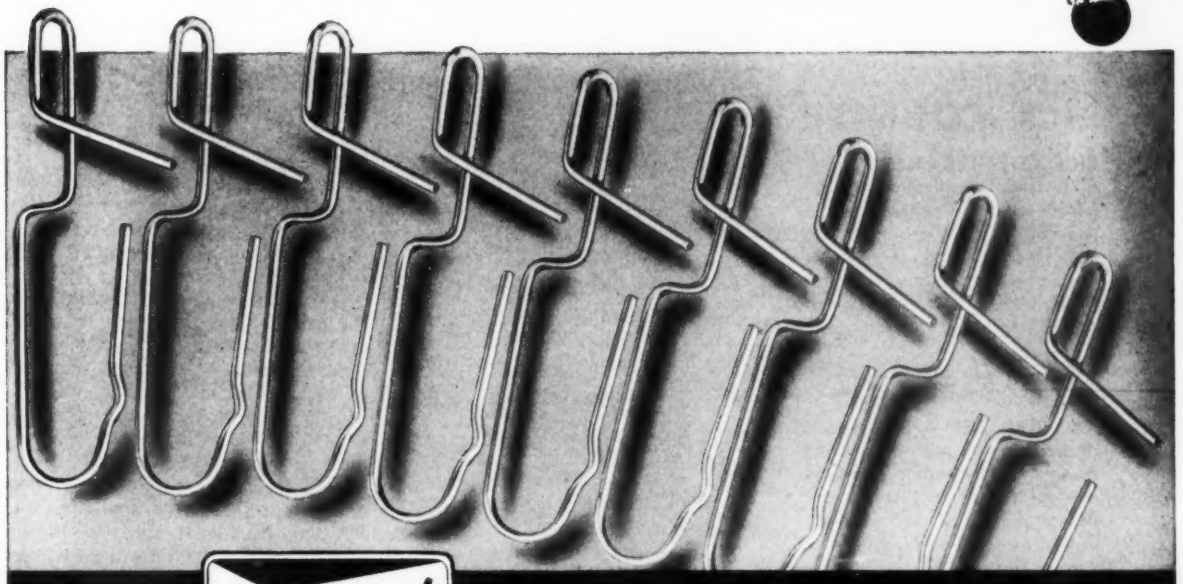
► If there's a humidification system beneath a roof, the roof should be insulated. A glass-fiber product is a good insulator.

► A 20-yr. slag bonded roof is an excellent roof.

► Built-up roofs will last 15 yr. if they're mopped every second year. If they're neglected for as long as 3 yr., they may dry out and have to be reroofed.

We're experimenting with different types of mopping compound. Some mills are mopped with a $1.60-per-

Do Your Textile Parts Have Nine Lives*



Many Walhard Chromium Plated Parts Do!

SAVE MONEY ON REPLACEMENT PARTS

Replacement parts are major cost items. They represent a serious challenge to profits. To save money on replacement parts, we have a simple, effective suggestion.

GET THE WALHARD HABIT!

Many mills have it . . . they regularly send us their worn chromium plated parts for replating. They get, in return, parts as good as new that give money-saving performance long beyond their original life.

*HOW LONG DO PARTS LAST?

The type of part and the wear it gets naturally dictate the life of a part — but we can prove to you that parts running in your mill right now can be replated several times, greatly extending their usefulness!

HOW DO YOU SELECT YOUR PLATER?

Actually, the difference between ordinary and good hard chromium plating is simply the difference in the experience and ability of the plater. You should, then, select your plater on his record of experience and ability, which is the reason why —

— WALHARD is the Leading Textile Hard Chromium Plater.

WALTON and LONSBURY

ATTLEBORO • MASSACHUSETTS

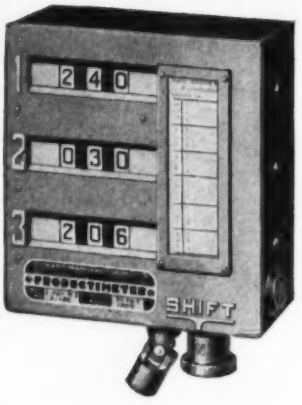
Walhard

WALTON AND LONSBURY
80 North Avenue, Attleboro, Massachusetts
We'd like to read your illustrated WALHARD brochure

Name .....
Title .....
Firm .....
Address ..... *City* ..... *State* .....

For more information, write direct or use Reader Service post card.

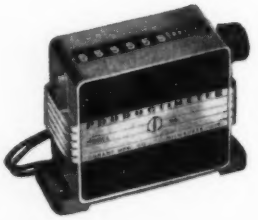
PRODUCTIMETER Progress



PICK COUNTER

PICK COUNTER (Model 4-PC-R-3) — Introduction of this improved model provided better readability and easier operation. The heavy drive construction assures trouble-free performance. It is tamper proof, dust proof and rust proof.

"Y" ELECTRIC



"Y" ELECTRIC — High speed, accurate, with maximum readability. Totally enclosed in compact new type case for protection against dust and moisture. Operates accurately over wide current fluctuations.

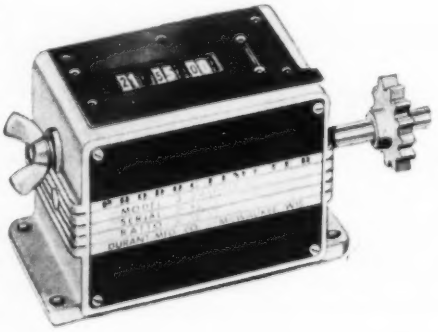
New Finish on Entire Line!

Attractive Alaska Gray and Seal Brown Combination.

DURANT DOFFMETER

The Durant Doffmeter is a compact, predetermined counter designed to cut off the loom or signal when the preset number of yards is reached. Eliminates cut marks and waste ends by assuring uniform yardage . . . simplifies inventory control.

Present day high costs make the installation of Durant Doffmeters on every loom a practical money saving investment. Plan now . . . write or contact us for detailed information.



DURANT MANUFACTURING COMPANY

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Representatives in Principal Cities

Send for Catalog No. 501

PRODUCTIMETERS SINCE 1879 *Count Everything*

gal. compound with a built-in primer.

Some other mills are mopped with a $0.50-per-gal. substance. Roofs coated with this material need a primer coat of oil. The double-coated roofs are the prettiest.

It will be some time before we have any comparative data on the relative lives of each roof.

The Stelometer

(*Continued from* page 97)

returns them to the initial position when the pendulum is returned to its starting position. The pin has a safety device that prevents accidental injury to the indicators.

The rotating frame that supports the pendulum is connected to an air cylinder. The center of gravity of this rotating frame is so placed that the frame rotates under gravity with a constant pull on the air cylinder and, consequently, with constant movement if the air intake is constant. The rate of loading is controlled by this method so that it is approximately constant. An adjustment in the air intake makes it possible to vary the rate of loading over a wide range.

Both the frame and the pendulum are equipped with sealed ball bearings to give a smooth, even operation. The instrument is entirely free of vibration and should give a smooth increase in the force. It is equipped with a spirit level so that the instrument may be easily leveled. A special clamp holds the jaws firmly together for adjusting the movable-jaw fork on the frame to zero indication of extension. The clamp is also useful to hold the jaws at zero extension over the whole scale of forces to check the over-all distortion compensation and to adjust the rate of loading.

How To Prepare Samples

The population of fibers is sampled by a pair of Fibrograph combs in the usual way, then combed to give good randomization and parallelization. A spring-loaded clip as wide as the ribbon sample is used to remove a portion of the fibers from the comb. The clip is clamped on the fibers at a distance from the teeth slightly in excess of the thickness of the Pressley jaws.

The fibers not firmly held by the clip are combed out to give a ribbon with all fibers that will extend all the way through both jaws. The use of this clip prevents handling and possible moistening of the fibers by the hand. The Pressley jaws are held in a special vise that maintains them at an angle of 45° with the vertical. The upper lip of the vise is equipped with

For more information, write direct or use Reader Service post card.

The Price is Higher and well worth *each extra* Penny!

The price per pound of AEROTEX* SOFTENER H is higher, but the working cost is right in line. It is not necessary to use as much AEROTEX SOFTENER H. It offers greater versatility and greater value at no extra cost.

AEROTEX SOFTENER H has been developed specifically to give your fabrics finer quality, provide a full yet soft hand, and to reduce your application and storage problems.

Look at the long list of advantages. One of our technical representatives will be glad to show you how AEROTEX SOFTENER H can serve your needs.

Textile Finishing Bulletin No. 124 describes fully the application of AEROTEX* SOFTENER H. We will be glad to send you a copy.

aerotex* softener H

Provides smooth, supple, full and soft hand to cotton, rayon, acetate, wool, nylon, acrylic and polyester fibers.

Fully compatible with the most widely used synthetic resin solutions.

Easily dispersed in warm water—does not require boiling. Stable to both acids and alkalis. Finish always uniform, with no specking.

Easy to handle—a creamy paste. Excellent stability and wetting properties.

Does not develop rancid odors in storage.

Reduces static electricity during weaving and finishing. Cloth plaits smoothly in boxes. Cleaner and more uniform carding.

Reduces static electricity in finished fabrics. More efficient cutting and sewing. Garments don't attract lint and dust, don't cling.

Does not yellow in storage or when exposed to heat. Does not discolor after washings or cleanings.

*Trademark of American Cyanamid Company

AMERICAN Cyanamid COMPANY
TEXTILE RESIN DEPARTMENT
BOUND BROOK, NEW JERSEY

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CHICAGO · LOS ANGELES
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...but TENNANT
DRY-CLEANING
makes the difference!

What a contrast! An old, oil-soaked floor made 533% brighter . . . safer than before . . . and given a smooth, hard surface that resists dirt penetration —*all because it's dry-cleaned the* TENNANT *way.*

Gives you BRIGHTER, SAFER FLOORS . . . AT LESS COST

Are there dark, slippery floors in your mill due to prolonged wet-scrubbing? Then check these advantages of the TENNANT System:

RECONDITIONS your floors. Fast, easy-to-use Tennant machine brings your floors to life again! Gets rid of dark, rough, oil-soaked fibers . . . leaves floor bright.

HARDENS surface to resist wear. Special sealing process fills, binds and hardens wood fibers. Makes your floor resist dirt penetration . . . prolongs floor life.

DRY CLEANS, eliminates scrubbing. A fast, one-man job . . . with no mess or bother. Keeps floor lustrous, DRY, non-slippery. Enthusiastically approved by hundreds of mills.

WRITE TODAY for full information.

G. H. TENNANT CO.
2586 NORTH SECOND STREET
MINNEAPOLIS 11, MINN.

TENNANT INDUSTRIAL FLOOR MACHINE

- Cleans floors, picks up soilage.
- Complete accessories for ALL your floor maintenance work.

Tennant Floor Machines have 12" or 16" revolving steel wool roll (or other accessory) that smoothly removes dirt and traffic stains. Very speedy and easy to use. Provides a smooth, dry, hard surface . . . saves man-hours.

ASK FOR ILLUSTRATED BULLETINS

The way to finer floors
TENNANT
Floor Maintenance System
ESTABLISHED 1870

The Tennant System ENDS SCRUBBING

Floors, like roads, are safer when DRY!

a pair of guides and a spring-actuated auxiliary clamp.

The fibers in the clip are placed inside the guides and immediately under the clamp and drawn down through the opened Pressley jaws. The weight of the clamp at the 45° angle gives a standard pretension to remove the crimp from the sample. The jaws are closed on the sample with the loosely hanging clip to provide the pretension. The vise can rotate and is spring loaded. The screws of the jaw are tightened up to a torque of 8 lb.-in. as indicated by the rotation of the vise.

These techniques were adopted in order to replace many of the uncontrolled operator actions by predetermined mechanical operations. The preparation of the sample on the Fibrograph combs is, however, still subject to some operator difference.

Class Cotton by Tenacity

Preliminary test results with the Stelometer indicate that different cottons can be pretty well characterized by the tenacity at some specified gauge length and by the elongation. If tenacity and stretch are observed at two different nominal gauge lengths, values can be determined for each cotton.

Less Scatter at ⅛-in. Gauge

We plotted tenacities at zero gauge length and at ⅛-in. gauge length against strength of 22s yarn. The tenacity scale for zero gauge length was changed so that the average abscissa was the same as that for the ⅛-in. gauge length. (We did this so that the scatter of the points would indicate the relative correlation of the two sets of data.) Tenacity at ⅛-in. gave less scatter than tenacity at zero.

Gin-Drying Temperature

(*Continued from page 97*)

6. Storage of seed cotton prior to ginning at a low gin-drying temperature, and subsequent spinning without further storage in the bale, result in a decrease in ends down in comparison with unstored cotton.

7. The skein-break factor decreases with storage of low-temperature gin-dried cotton but not of high-temperature gin-dried cotton.

8. The effect of gin-drying temperature on single-end and skein strengths is not known. A test on 30s warp showed the high temperature gave stronger yarn, but a test on 42s filling gave the edge to low temperature.

9. The per cent nonuniformity (%NU) of both warp and filling yarn

Do you use all the tools of the trade?

Good management is distinguished by the way it employs superior tools and materials to produce fine products at a profit.

Many manufacturers employ the services of William Iselin & Co., Inc., as essential tools of their trade.

Iselin services are designed for each manufacturer's needs—his financial position, his credit problems, and his ultimate objective of increasing volume and profits.

WILLIAM ISELIN & CO., INC.

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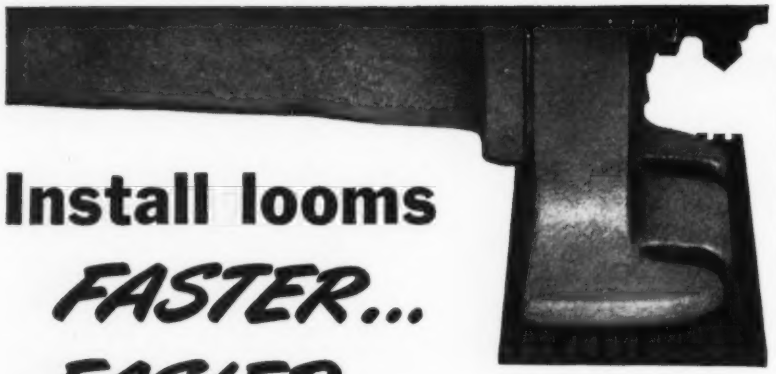

Install looms FASTER... EASIER...

and cut operating costs besides with **ISOMODE TEXTILE PADS**

ISOMODE* TEXTILE PADS permit you to install looms on any type floor without bolting, floor damage or special preparation. Cut to size and placed under legs of equipment, they absorb loom vibration and eliminate stresses and strains resulting from rigid mountings. This keeps machines in place, even without cementing—reduces noise—cuts down maintenance of both building and equipment.

Engineered from Du Pont "Neoprene", Isomode Pads last for years. Mill installations have revealed that not only are they one of the most effective mountings you can get, but also one of the most economical.

Even a few looms mounted on Isomode Textile Pads are enough to show you convincing proof of the Pad's remarkable effectiveness. Why not see for yourself? Get more details by mailing in the coupon.

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THE MB MANUFACTURING COMPANY, INC.
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☐ Please send data sheet containing more information on Isomode Textile Pads and how to install them easily and quickly. ☐ Send price sheet and delivery date.

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spun from high-temperature gin-dried cotton was greater than that for low-temperature gin-dried cotton.

10. Numerous physical and chemical tests made on the variously processed cottons failed to show the cause for the decrease in ends down during spinning that results from either bale- or seed-cotton storage.

Test Procedure

The tests were divided into two parts. The first part was concerned with the effect of storage (as baled lint) on freshly opened "green" cotton ginned with drying temperatures both lower and higher than normal. The second part of the test was concerned with the effect of storage before ginning on freshly opened seed cotton subsequently ginned at a temperature lower than normal.

Cotton picked from the same field at the height of the season (test lots were of "green" cotton, freshly opened pods only) and ginned after low-temperature drying served as the control in the tests.

Waste-Yarn Costs

(Continued from page 107)

hr. is a reasonable rag allowance for each loom on any type or weight of woven cloth.

0.00066 ÷ actual lb. production per loom hr. × 100 = the percentage of rag waste.

Further calculations are necessary to obtain the standard waste allowance for each type of waste. When more than one type of cloth construction is used, each type must be figured separately and the results added. These formulas will give the total waste figures for a weave room:

a. To find the standard pounds of cloth production: standard pounds of production per hr. × No. hr. × No. looms

b. To find the standard waste allowance: pounds of waste allowed × No. hr. × No. looms

c. To find the standard percentage of waste: standard pounds of waste ÷ standard production × 100

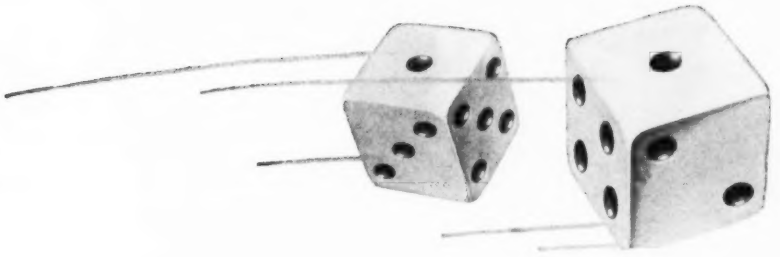
d. To find the actual percentage of waste: actual pounds of waste ÷ actual production × 100

Reports from the waste-control program show that the yarn-waste cost in a 2,000-loom weave room is $200,000 per yr. That's after the reclaimed waste has been sold. Without waste control, the cost was much higher.

A successful waste-control program incorporates the training of weave-room supervisors so that they can reduce waste materials to the standard figures shown by the formulas.

Don't gamble on your source of supply for

ACETIC ACID



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CELANESE ACETIC ACID
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Acetic Acid Content % by wt. min.	99.5
Specific Gravity @ 20/20°C	1.050-1.055
Color	water white
Freezing Point, °C min.	15.6

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This wooden dye house roof has defied rot since 1924!

● The constant presence of steam and condensate had made the dye house roof a continuing source of maintenance expense to Belding-Corticelli at Putnam, Connecticut.

But—in 1924 they replaced the old roof on the dye house with "Wolmanized"* pressure-treated lumber. The results speak for themselves . . . as does Mr. L. L. Brown, Belding-Corticelli's Master Mechanic, ". . . still in good condition—taking a beating of steam and condensate every day".

"Wolmanized" lumber can solve many of your maintenance problems caused by the moisture that is always present in dye houses and bleacheries. Ask your architect or plant engineer about genuine "Wolmanized" *pressure-treated* lumber . . . or write for complete information and the folder, "Wood Preservation".

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Wolmanized

*Reg. U. S. Pat. Off.

PRESSURE TREATED

Lumber

Power-Plant Maintenance

(Continued from page 115)

gram. It is dangerous for anyone to rely on memory for anything as important as this. In case of trouble, it is a great deal more reassuring to be able to show written evidence of work done in case any question on maintenance work comes up.

There are several distinct advantages to keeping complete records of repairs:

1. It gives you a chance to think the job over and decide how much good was done and how much was wasted effort and money.
2. It gives you a chance to consider how long you should wait before the next inspection or overhaul, based on the conditions you found at this one.
3. It gives you valuable records at the time of the next shutdown so that measurements, etc., can be compared.

How Many Records To Keep

There are a number of ways of keeping track of maintenance work. Some people keep a separate booklet for each piece of equipment and so are able to have a complete history of each item.

The only difficulty is that perhaps you don't like to keep records and that sometimes you start keeping several sets of records and there gets to be too much detail. Records should be as simple and as automatic as possible.

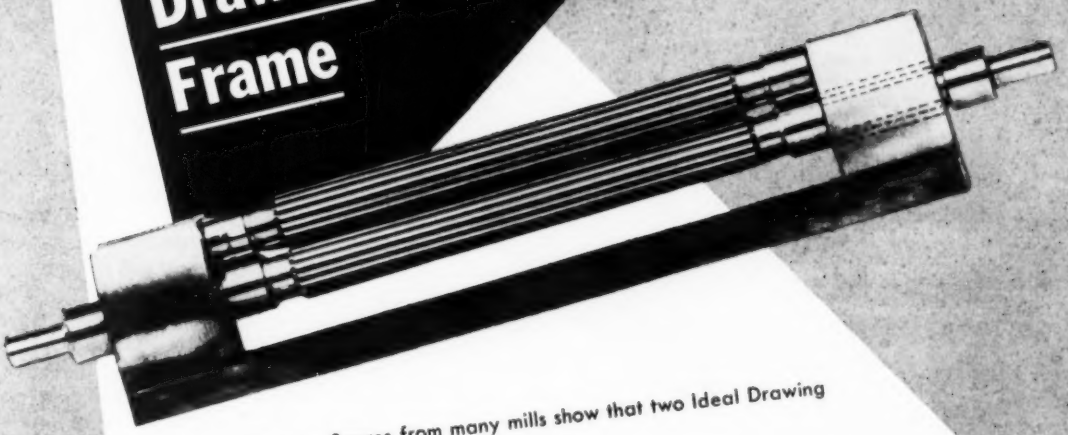
The best system I have found for keeping track of frequency of minor inspections is by means of a bulletin board. The items to be inspected and the frequency of inspection are listed at the left, and the remainder of the sheet is ruled for the dates of inspection and the initials of the inspector. By looking at the date of the last inspection, it is easy to see when it is due to come up again.

This system has an added advantage in that in case the inspection comes due during a busy period it can be postponed a week or a month; but the space for date and initials will stay blank, and the job won't be forgotten. This type of chart is effective for keeping track of operating and lubrication checks.

I favor the chart-type record because:

1. It is always in front of you, as a constant reminder.
2. Is is easy to fill out.
3. You can include a number of minor items.
4. Old charts can be kept as history.
5. It is flexible; and in case dates

Ideal High Speed Ball Bearing Drawing Rolls* Produce More Drawing Per Frame



Actual production figures from many mills show that two Ideal Drawing Roll Units outproduce three of other types.

Faster Speeds — Ball Bearing construction and permanent alignment and synchronization permit continuous high speeds which are impossible on other drawing equipment.

Continuous Operation — Hardened and ground fluted rolls never nick or burr to cause ball-ups and frame stoppages. They also eliminate the frequent taking down, cleaning, reconditioning, scouring, removing burrs, and oiling which are necessary on conventional drawing. They not only run faster but they run more hours per year.

Ideal Drawing Rolls also produce better roving and cut costs. When the Ideal Evener Motion, which was shown at Greenville, is in production it can be added to this equipment.

Write or wire for full information.

*Patented

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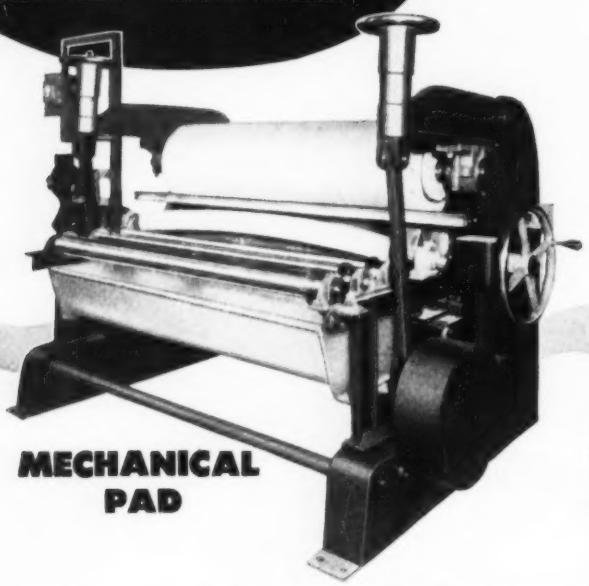

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PAD

Can the installation of a Tower Mechanical Pad help solve your production problems? This unit is representative only of the broad range of Textile equipment now being offered by Tower.

Our engineers will consult with you in the design and installation of the finest in textile equipment, to meet your most exacting operational requirements.

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are missed, there is no chance that they will be forgotten.

How To Get Work Done

The problem of determining how to get power-plant maintenance work done is probably one of the most difficult to solve correctly, for several reasons.

First, a power plant has to have some kind of maintenance crew of its own. The maintenance of power-plant equipment can't be adequately covered by the same crew that does the rest of the plant maintenance.

Second, you can't afford to maintain a power-plant maintenance crew large enough to take care of all the maintenance work.

Third, some of the maintenance work should be done by operating personnel because a man who has done repair work on his equipment becomes a much more effective operator.

Some advantages of a special crew for power-plant maintenance work are:

1. The men know the equipment and are, therefore, more efficient.
2. You have continuity of effort.
3. Your own crew is interested in doing a good job.
4. They know where the spare parts are and what they look like.
5. They know where the special

(*Continued on page 334*)

Knitting Training Manual

(*Continued from page 87*)

6. Make sure that all latches of rib needles are open.
7. Transfer down by depressing the top transfer cam and turning the machine.
8. Check to see that every needle has one stitch.
9. Restart.

Press-off in Heel or Toe

1. Raise the trip lever to allow the pawl to rack the drum out of the heel or toe.
2. Thread up the yarn and proceed as above.
3. Do not rack the drum when the machine is in oscillatory knitting.
4. Do not run the machine in heel or toe with the doors off.

Removing Cam Boxes

1. Set the machine at the starting position.
2. Put the heel-bolt cam and raising cam in such a position that the needles ride in a straight run.
3. Disconnect all levers, rods, springs, etc., without changing their adjustments.
4. Place all spares in boxes or on a

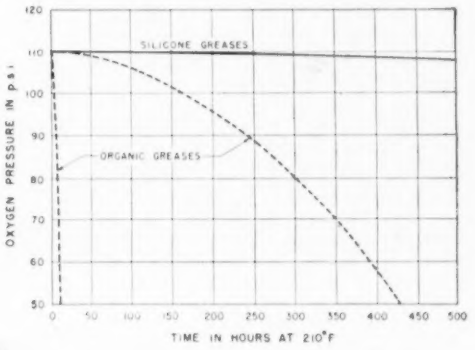
specify

DOW CORNING SILICONE GREASE 44

to reduce maintenance and increase the life of ball bearings operating at high temperatures

here's why . . . . . **1** Dow Corning Silicone Greases have extraordinary resistance to oxidation as indicated by the data given in Figure 1. After 500 hours of exposure to oxygen under a pressure of 110 psi at 210°F in contact with brass as a catalyst, a pressure loss of only 1.5 pounds was registered in the Norma-Hoffman bomb testing of these silicone greases.

OXIDATION RESISTANCE OF SILICONE AND ORGANIC GREASES IN THE PRESENCE OF BRASS AS INDICATED BY OXYGEN-BOMB TEST RESULTS



2 Dow Corning Silicone Greases show relatively little bleed or evaporation at temperatures in the range of 300-400°F as shown by the data given in Table I.

3 Dow Corning Silicone Grease 44 is serviceable at temperatures from —40 to 400°F in ball bearings having a maximum speed factor (bore in mm times rpm) of 150,000 to 225,000. The worked penetrometer (ASTM D217-48) for Dow Corning Silicone Grease 44 is: light consistency 300-320; medium, 250-270. Melting points are above 410°F; minimum flash point is 600°F. Ask for data sheet AJ-4.

TABLE I

RELATIVE BLEED AND EVAPORATION OF VARIOUS GREASES

Temperature in °F	Test[1]	Dow Corning Silicone Grease 44, Light Consistency	High Temperature Petroleum Greases A	B
300	Bleed, %	1.3	2.9	0.2
	Evaporation, %	0.6	2.9	13.4
	Total loss, %	1.9	5.8	13.6
390	Bleed, %	1.0	7.8	Nil
	Evaporation, %	3.5	15.4	39.8
	Total loss, %	4.5	23.2	39.8

[1] Values determined with equipment specified in AN-G-ia, except that test samples were held at test temperatures for 24 hours.

In the bearings of dryers, Dow Corning Silicone Grease 44 is used to reduce the relubrication schedule from once every 8 hours to once every 3 months. Operating temperatures are in the range of 350°F. Dow Corning Silicone Grease 44 Medium is now specified for all dryers in a large textile plant after 2 years of testing in National and Proctor & Schwartz machines.

In the bearings of Sanforizers. Experience in a large textile finishing plant indicates that Dow Corning Silicone Grease 44 can be used to reduce the relubrication schedule on main cylinder bearings from once every 8-hour shift to once every 30 to 45 shifts.

In the bearings of slashers. Two years of experience in textile mills indicates that Dow Corning Silicone Grease 44 Light has a service life of about 3 months at temperatures up to 350°F in closed-type Uxbridge Slashers.

In motor bearings, Dow Corning Silicone Grease 44 has many times the life of high temperature petroleum greases at temperatures in the range of 300° to 350°F. In permanently sealed or "cartridge" type bearings Dow Corning Silicone Grease 44 Light has a life expectancy of at least 5 years. That has been confirmed in thousands of motor bearings installed during the past 5 years by one of the major motor manufacturers.

In the bearings of oven conveyor systems, Dow Corning Silicone Grease 41 gives very satisfactory service even under conditions so severe that continuous, automatic oiling with the best high temperature organic lubricants could not keep bearings operable.

DOW CORNING CORPORATION DOW CORNING SILICONES **MIDLAND, MICHIGAN**

Atlanta • Chicago • Cleveland • Dallas • New York • Los Angeles • Washington, D.C.

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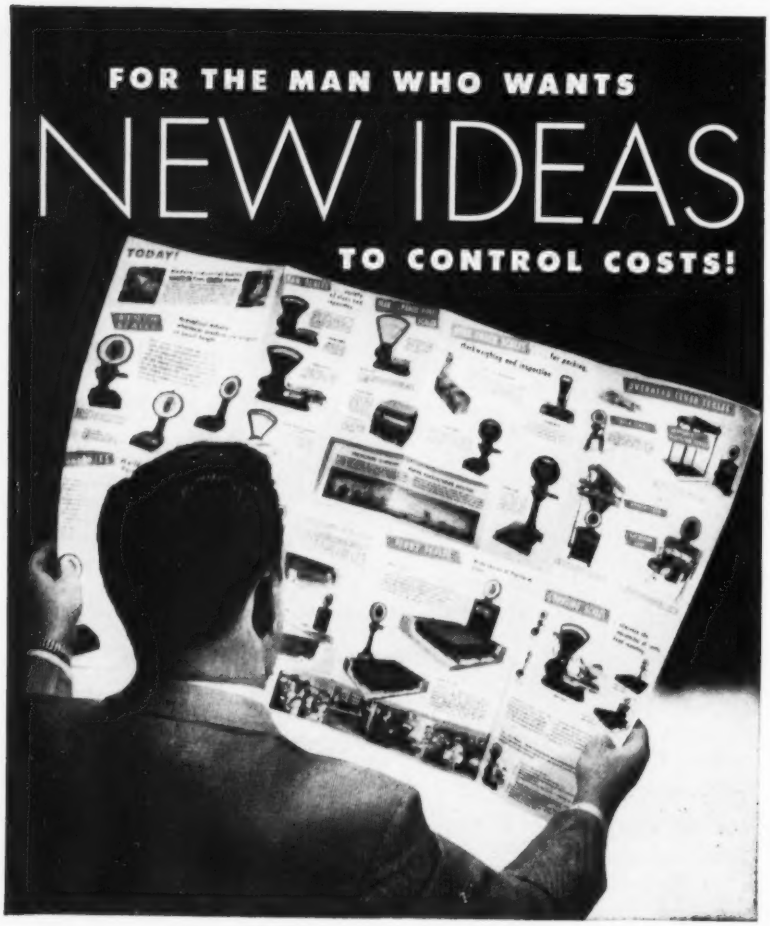

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clean cloth on the bench where they cannot be damaged or lost.

5. Pull the cam box off straight so the contour of the sliders will not be disarranged.
6. Remove all broken butts, foreign matter, lint, etc.
7. Check the cams for wear, cracks, looseness, protruding screws, etc., and check the functioning of movable cams.
8. If the machine is left, remove the belt and tie up the handle or remove the handle.
9. Wipe the face of cams with an oily cloth.
10. Make sure that the cam box fits flush to the cylinder.
11. Insert the correct screws. If they are tight, take off the cam box and investigate.
12. Tighten up screws progressively.
13. Connect the springs, rods, levers, etc.
14. Check to see that no parts remain unattached.
15. Turn the machine slowly by hand.

F.-F. Handling System

(*Continued from page* 81)

The stocking is removed from the form by mechanical means assisted by air pressure, and then it is dropped into the bag. No handling is done to remove the stocking from the form. It is completely removed in ⅜ sec.

By using the Ammon machine we have reduced costs by reducing handling, and we have also reduced labor costs. Six inspectors are now doing the work of 13 girls. The rate has been reduced from 13.7¢ to 4¾¢ per doz. A fast operator can average 220 doz. per day with the machine. On the old hand form this operator could do only 80 doz. The girls also find the work on the new machine less tiresome.

Handling is further reduced by placing our mending table very close to the inspectors.

When a 3-doz. lot has been dropped into the dyebag, it is taken away, stamped for size and style, and stored in the gray stock room until dye orders are received.

As we use the Dunn system of finishing, it is very convenient to put the stockings into a dyebag immediately after inspection. This procedure not only saves additional handling of the hosiery but also protects them while in gray-stock storage.

Get that
SCRAP
Back to WORK!

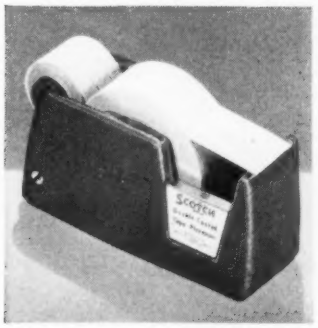
TAB with TAPE

...stop torn end laps!

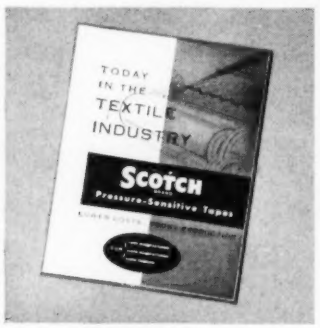
No more snagged or punctured end laps! No more slow tying! No more soiled cloth—thanks to "Scotch" Brand Textile Tape No. 254. Short strips of this money-saving tape fasten the outside lap quickly and securely. Stain-resistant adhesive removes cleanly.

There's a "Scotch" Brand Textile Tape designed for almost every operation in the textile industry. Warping, slashing and leasing are all done better in less time, at less cost with these tapes designed to meet industry specifications.

We'd like to show you how you can save with tape. At no cost or obligation, we'll send a qualified engineer to explain these new, improved methods. A letter to us in care of Dept. TW-43 will bring fast action. Write today on your company letterhead!



OVER 50 hand-operated dispensers, like this model that delivers a "Scotch" Brand Pressure-Sensitive Tape with adhesive on both sides, are ready to speed application. Whenever desired, we'll *design* a dispenser for your needs.



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Questions AND Answers

Size Formula Is Good For Filament Yarns Only

Technical Editor:

The Kinks and Short-Cuts section of the October, 1952, TEXTILE WORLD carried a formula for figuring size for rayon slashing. This formula is:

$$\frac{\text{Yarn denier} \times \text{yardage on beam} \times \text{ends in loom warp}}{4{,}464{,}528 \times 8.33}$$

For acetate, the answer is multiplied by 0.6.

Can this formula be used for spun rayons? What is the use of 8.33 in the formula since it comes from dividing 7,000 gr. by 840 yd.? Is the formula good for the silk system? (9634)

This formula is not recommended for spun rayons, and no conversion factor to make it workable is known.

The constant 8.33 relates grains to yards as well as pounds to gallons. A check of units in the equation gives

$$\frac{(\text{lb.})\ (\text{yd.})}{(\text{yd.})}$$

So the answer would be in pounds of size if you do not divide by the constant 8.33 to get gallons.

The formula is applicable to warps sized on the silk system or any other system as long as the yarn is filament, the yarn number is expressed in denier, and the beam length is given in yards.

Spin Numbers Suitable to Fiber Length and Fineness

Technical Editor:

American cotton has been giving us a lot of trouble lately; the staple is bulky and rough. We are having difficulty getting the yarn number we want. Would you examine the enclosed bale tags and give us some information on the crop? (9636)

The bulkiness and the rough preparation could both be caused by dry cotton, since the season was unusually dry last year.

In general, the cotton throughout the rain belt was shorter and coarser than average. This fact will make it difficult for spinners to manufacture the yarn numbers they have been accustomed to making from cottons from the same areas. There will be more

For more information, write direct or use Reader Service post card.

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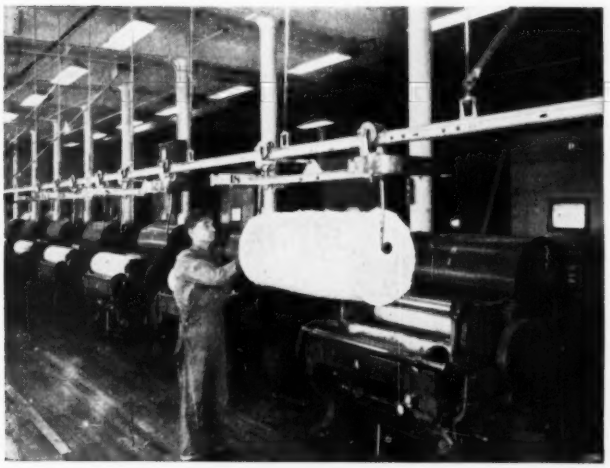
American MonoRail Engineers can show you how to get more profitable production out of your plant by systematizing material handling. Let them show you how to convert lost ceiling space to profit—how to eliminate obstructive storage around machines—lessen worker fatigue—reduce heavy load accidents—stop damage to product in motion.

Bring us your handling problems —American MonoRail can provide the equipment best suited to your needs.



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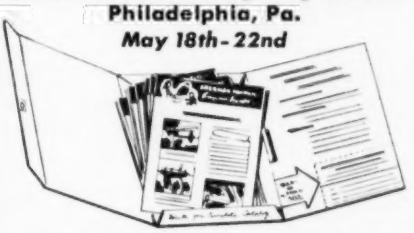

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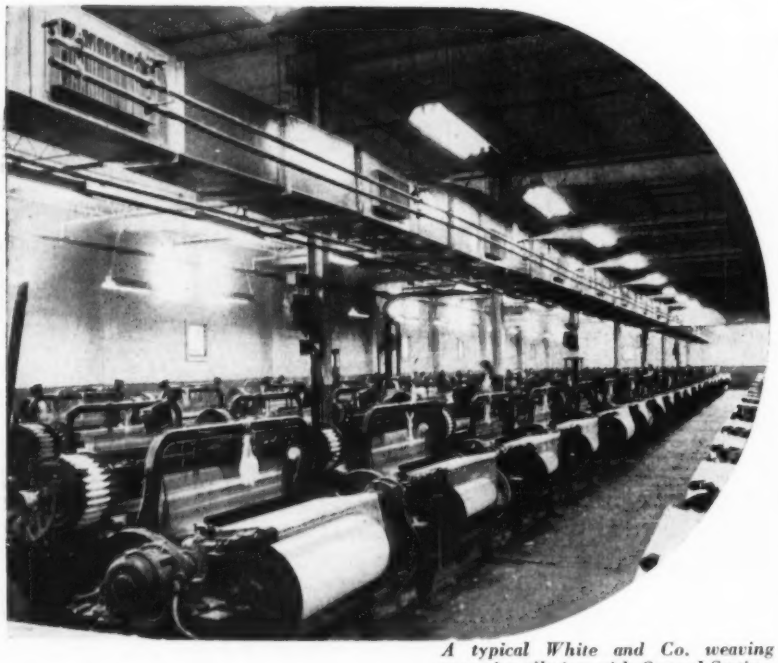

A typical White and Co. weaving room installation with Central Station.

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ends down and perhaps weaker yarn than anticipated.

The tags indicate that the cotton came from the Rio Grande Valley and Corpus Christi areas. The fiber strength of the cotton in the Rio Grande Valley this past year was not so good as in previous years. The cotton from Corpus Christi was strong but fine. This cotton might give trouble when you use high twist multipliers, but it should give excellent yarn strengths when spun into numbers suitable to the fiber length and fineness.

There Is No Trend To Finer-Gauge Tricot

Technical Editor:

Is there a trend toward finer-gauge tricot machines because of the increasing fineness of the textile fibers? (9633)

There does not appear to be any trends towards finer gauges for the manufacture of women's lingerie fabrics. Very sheer fabrics can be made on 28-gauge machines.

Experiments are being made on 36-gauge machines to produce lightweight fabrics with greater cover. These fabrics are made of nylon and are intended for the men's-shirt trade.

Here is the distribution of tricot machines by gauges in the United States:

26 gauge and coarser—33 machines
28 gauge—2,782
32 gauge and finer—176

Fiber Properties Change During Mercerizing Process

Technical Editor:

Do yarn and fabric gain or lose strength in mercerizing? Some authorities say they gain; yet some test results indicate strength losses. (9637)

Mercerizing does and does not increase tensile strength. If you take a sample of yarn in the laboratory and mercerize it with tensions to obtain the same stretch as in an unmercerized yarn, you will find an increase in tensile strength. This increase is probably caused by the closer embedding of the fibers in the yarn, as well as a slight increase in individual fiber strength from the swelling action of the mercerizing caustic. However, when this latter condition exists, the dimensions and physical relationships of the fibers are changed from what they were in the gray yarn. You no longer have the same length yarn, nor do you have the same stretch. Thus, you are not measuring yarn under the same physical conditions you had in the gray.

The mercerizing of piece goods be-

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DOLGE has a floor finish for *every* specific purpose. If you have a special floor maintenance problem, your Dolge Service Man will gladly demonstrate the *correct* finish. No obligation, of course.

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WESTPORT, CONNECTICUT

comes even more confusing, particularly if you are comparing a gray and finished piece of cloth. First, you have to remove warp-sizing waxes and other impurities in the cotton, and these impurities affect tensile strength. The goods are exposed to a caustic boil, which can adversely affect tensile strength if not conducted properly. The same holds true when the goods are bleached, dyed, and finished.

Off the mercerizer itself, you do not have the same warp and filling relationships as in the gray fabric. Dimensions are changed further as you go through the further operations.

There are many factors that can affect the strength of the yarn; mercerization itself is a rather small portion of the whole finishing process. Any one of the other processes, particularly caustic boiling and bleaching, can play havoc with tensile strength. The same holds true for dimensional changes.

Sheetings and lightweight fabrics that are easily stretched can lose a great deal of tensile strength from the gray, and not only because of changing the warp and filling relationship. If goods are overstretched, particularly fillingwise, there is natural slippage of the fibers in the yarns; and this slippage can markedly lower tensile strength.

Fabrics often have to be pulled too much during mercerizing to obtain the proper finished width. As a result, the filling tensile strength for the fabric often shows a greater loss from gray to finished cloth than is desirable.

Here Are Some Causes Of Poor Shed and Cut Ends

Technical Editor:

We are getting too many cut warp ends, and the warp shed is not sufficient. What could be the causes of this trouble? (9638)

Your weaving troubles might be caused by one of the following factors:

1. Insufficient warp shed
2. Harness timed too early or too late
3. Shuttle boxes out of alignment
4. Pickers out of parallel
5. Warp coming from a beam wider than the woven cloth.

Size Dacron With Starch And Polyvinyl Alcohol

Technical Editor:

We have had difficulty weaving Dacron yarn that has been sized. Could you give us a size for Dacron yarn that would not chafe off and gum up the reed? (9635)

Dacron is usually sized with a combination of starch and polyvinyl alco-

For more information, write direct or use Reader Service post card.

Portable Foxboro Dynalog Redox Recorder, with recording temperature pen, as applied to jig dyeing.

REVOLUTIONARY ADVANCE IN CONTROLLED DYEING

- Increases color yield and uniformity
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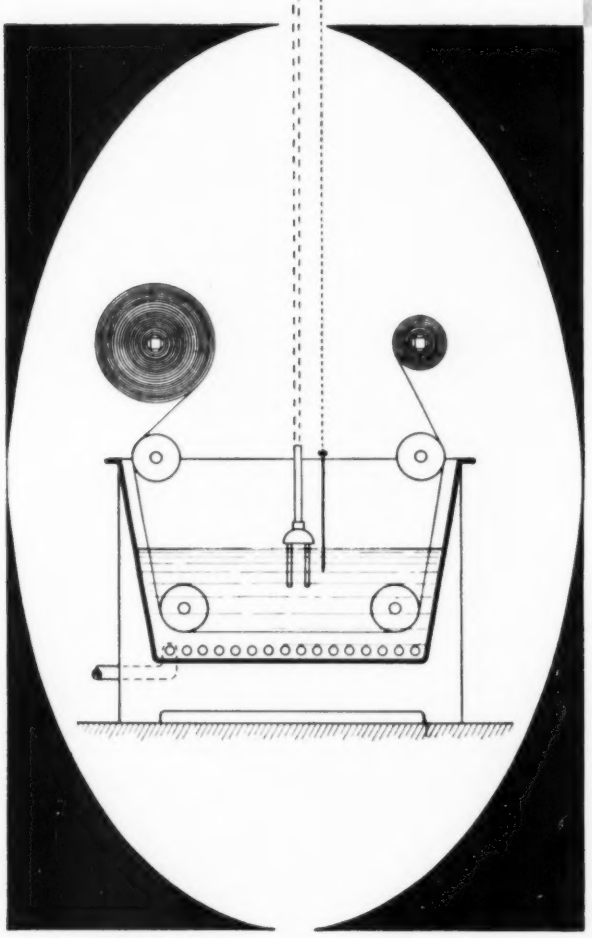

Here's a simple, inexpensive instrument that may completely solve costly problems in your batch or continuous dyeing processes—whether for cloth, yarn, or raw stock. The Foxboro Dynalog Redox Recorder determines the ability of the chemical bath to reduce the dyestuff for maximum color yield.

This is how it works. Almost every dye has a definite millivolt potential at which reduction is most efficient. By constantly recording the potential of the dye bath in millivolts, the Redox Recorder shows any variation from this optimum value . . . enables the dyer to make immediate accurate corrections by adjusting chemical concentration and temperature.

Now in use in more than 40 mills, this unique instrument has been endorsed by dyestuff manufacturers for vat and sulphur colors, for indigo dyeing, and for Orlon dyeing by the cuprous method. Get all the facts. Write, wire, or phone The Foxboro Company, 844 Neponset Ave., Foxboro, Mass., U.S.A.

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Sterling Ring Travelers

SPEEDING UP?

Better check your travelers first. On them depends the speed you can operate with satisfactory results. To get the most out of a traveler, call on STERLING.

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STERLING RING TRAVELER CO.
FALL RIVER, MASS.

hol in some ratio. A typical formula, based on 100 gal. of finished volume, is—

Thin-boiling starch	170 lb.
Du Pont Elvanol #5105 (a polyvinyl alcohol)	40 lb.
Seycowax (a wax, tallow, or softener)	9 lb.

Another formula that uses a new starch ester is—

Nufilm	60 lb.
Elvanol	20 lb.
Carbowax	2 lb.

There are, of course, so many variables in the operation that it is difficult to lift one set of conditions and apply them somewhere else, but you may be able to get some help from the above information.

Air Conditioning Does Not Affect Fiber Length

Technical Editor:

What effect does air conditioning have on cotton in storage? Is the fiber length increased? (9600)

Tests have shown that cotton, in any package, will be affected by air conditioning only for two or three layers down. In a picker lap, these layers would be layers of cotton lap; in yarn, they would be layers of yarn wound up and down the bobbin; in roving, they would be layers of roving. A bale of cotton would be affected $\frac{1}{2}$ or possibly $\frac{3}{4}$ in. into the bale. The reason, of course, is that cotton is a good insulating agent and when it is packed together tightly, water will not penetrate it, even in the case of a bale of cotton floating down a river.

Air conditioning has no effect on staple length. After cotton is picked and before it is ginned, staple length will continue to increase slightly as long as the fiber is still growing to the seed. But when the fiber is detached from the seed, growth of length stops.

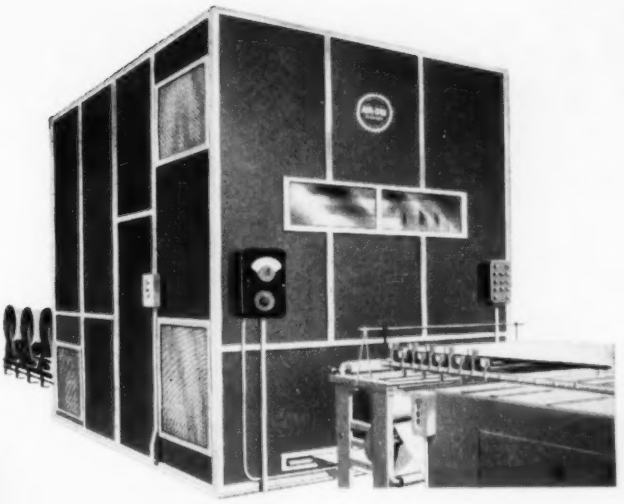
There Is a Limit To the Cleaning of Jute

Technical Editor:

Is there a method for removing the pieces of jute bark that do not bleach out during the bleaching of burlap? (9592)

Any attempt to remove the lignocellulose particles that remain in the cloth would remove so much of the jute that the cloth would be destroyed. This condition holds true for mechanical as well as chemical treatments.

There is a limit to the extent of cleaning and carding that can be done without reducing the jute to splinters. A single carding process will yield long, clean fibers that will spin into soft, clean yarns. A thoroughly cleaned jute will present spin-



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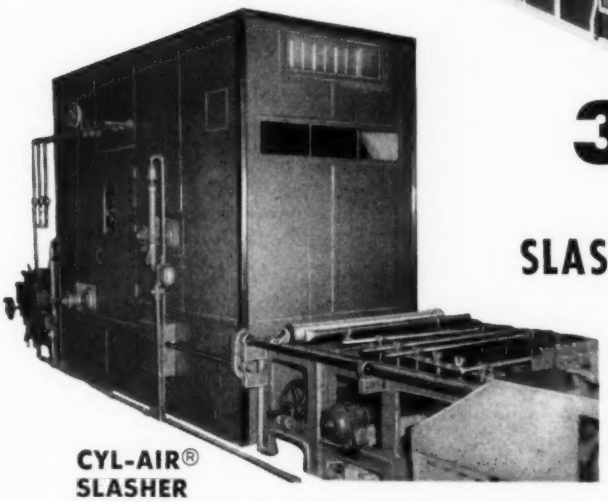
A high-capacity, hot-air type that is satisfactory for cotton, wool and spun synthetics. Drying rates as high as 1500 lbs./hr.



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Whatever your slasher room requirements, whether you're running natural or synthetic fibers . . . light or heavy warps . . . small run or full production . . . it will pay you to investigate the modern line of WPF&M Slashing Units.

CYL-AIR® SLASHER
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BOOTH NUMBERS 73-74

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ning problems caused by short hairs, and fuzzy yarn results.

The following bleaching procedure may help you:

1. Scour at 150° F for 2 hr. with 5% soda ash
2. Rinse warm, drain or squeeze
3. Add 5% (by volume) of potassium permanganate and let the jute steep for 30 min., cold
4. Drain, rinse well
5. Treat with 5% HCl and 5% sodium bisulfite at room temperature until the permanganate is reduced.

Repeat step 5 if necessary.

Time the Head To Keep Shuttle Boxes From Hanging

Technical Editor:

How can we stop the head-end shuttle boxes from hanging on skip-box patterns? (9605)

1. Set the eccentric gears for a slow start and a fast finish. Then retime the box motion. The box motion must be completely changed before the loom starts the pick.
2. Avoid extremely pointed shuttle spurs.
3. Closely adjust the shuttle check. An improperly adjusted shuttle check will delay the movement of the boxes.
4. Set the binder pressure just tight enough to prevent the shuttle from rebounding in the shuttle boxes.

If these parts are set and adjusted correctly, the shuttle box may be lifted from the first to the fourth box without hanging the boxes.

Selvages Can Be Marked With Yarns or Stamps

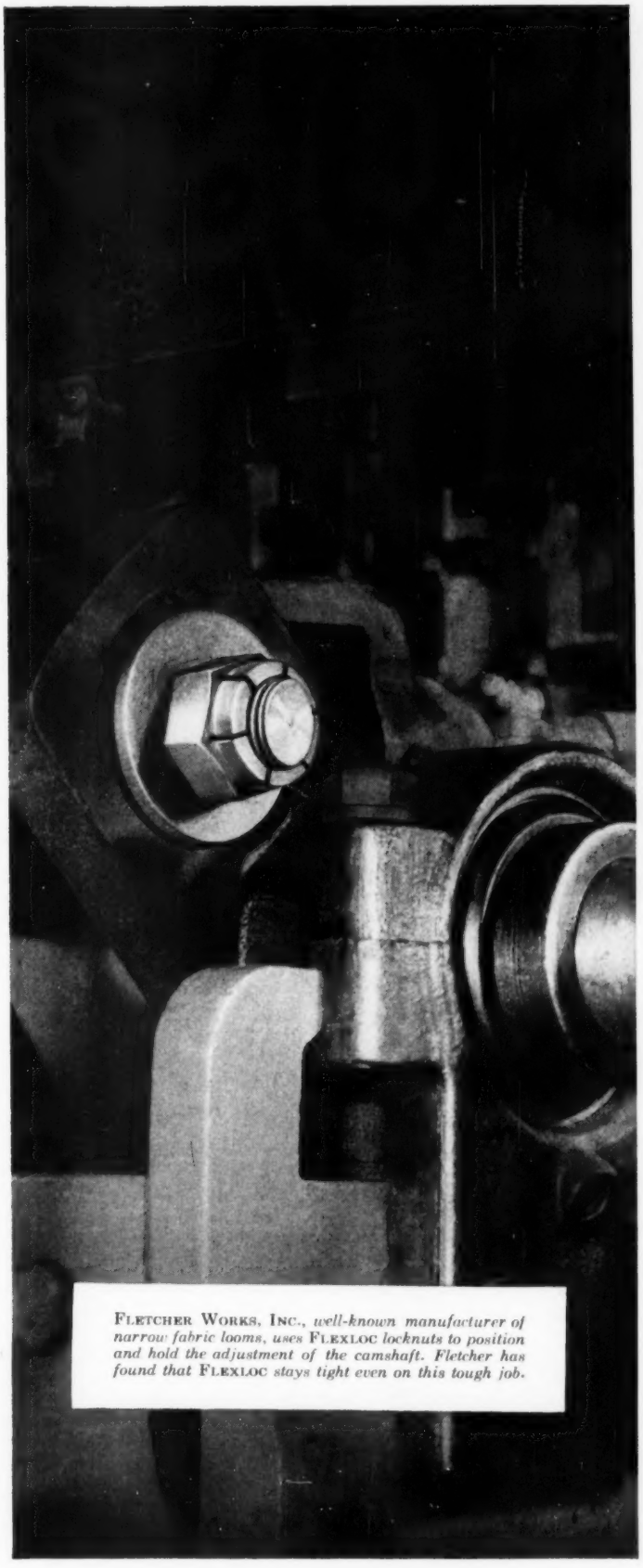
Technical Editor:

What is a simple, inexpensive method of marking selvages so that cloth can be identified wherever it is used? (9587)

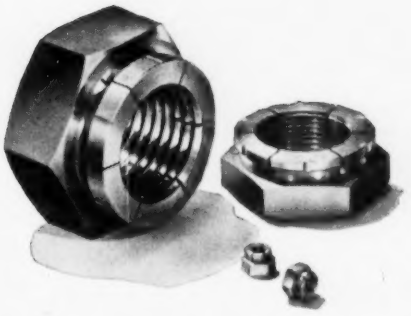
Selvages may be marked so that the seller's goods can be identified in several different ways. A number of manufacturers identify their fabrics by means of colored threads woven into the selvage. One manufacturer may use a certain shade of red in a single selvage warp thread, and another will use a certain shade of green. Still a third manufacturer may introduce two, three, or more threads of either the same or different colors. These threads in the selvage not only serve as identification for the manufacturer but also may identify a given manufacturer's lines. Thus the buyer has a quick and easy way to distinguish a certain weight and construction from another.

This type of selvage marking is generally used only on fabrics made of colored yarns or on goods that are

For more information, write direct or use Reader Service post card.



FLETCHER WORKS, INC., *well-known manufacturer of narrow fabric looms, uses* FLEXLOC *locknuts to position and hold the adjustment of the camshaft. Fletcher has found that* FLEXLOC *stays tight even on this tough job.*



How FLEXLOC locknuts reduce maintenance

FLEXLOCs reduce maintenance by staying where you put them. Once they are installed, you can forget them. Service and inspection periods can be stretched safely from days to weeks.

And FLEXLOCs eliminate complicated, time-consuming methods of locking threaded fasteners. They offer faster, simpler application, and safer, more dependable locking than plain nuts and lockwashers, castellated nuts and cotter pins, or nuts and jam nuts.

Use FLEXLOCs wherever you use an ordinary nut. These one piece, all metal locknuts—with nothing to assemble, come apart, lose or forget—won't work loose regardless of the vibration encountered. Yet they can be easily removed and used over and over again. FLEXLOCs are stop and lock nuts too. They don't have to seat to lock, and they stay put anywhere on a threaded member as soon as the locking threads are fully engaged.

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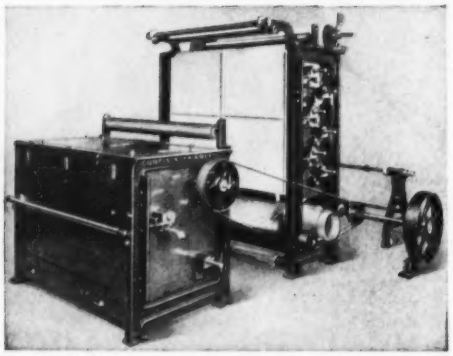

STARCHING OR DUSTING MACHINE

WITH VERTICAL BRUSHER AND TYPE SF WINDING HEAD

This outfit is used for applying starch to rubberized or other coated fabrics. The starch, powder, talc or other material is first applied to the goods and then the surplus is roughly removed; the brushes of the Vertical Brushing Machine will remove the remaining starch and leave a smooth uniform finish. The goods are rolled up usually on a Type SF Winding Head. There is a feed trough in the Starch Frame which is filled with the starch or other powdered material. The starch is fed down through perforated metal in the bottom of a trough to apply it evenly to the fabric as it enters the Starching Frame. A revolving roll with leather wings runs in the lower part of the starch trough.

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TRADE MARK REGISTERED

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However applied—by centralized system, finger, brush, or oil can—NON-FLUID OIL lubricates constantly and dependably, insuring longest life for rings and travelers. It stays on rings and off rails, giving cleaner yarn and fewer broken ends—which means increased production of perfect twist.

NON-FLUID OIL is particularly suitable for centralized method of application to rings, because it does not disintegrate under pressure—so that rings and travelers are supplied throughout the entire doff with a film of highest quality, cleanly lubricant.

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not expected to receive subsequent severe chemical treatments in bleaching, dyeing, and finishing operations.

Gray-goods manufacturers have often tried to identify their goods by using vat-dyed threads as selvage markers. These vat-dyed yarns would bleed and mark off on the other portions of the fabric in the usual finishing-plant operations of bleaching and dyeing. Such mark-offs and stains made by vat colors are almost impossible to remove by the finisher; so the manufacturer often found a claim against himself.

For goods that will go directly to a cutter or will be sold in the piece over the counter, finishers often mark the selvage by stamping on it a trade mark, trade name, or design. Stamping equipment is usually attached to the final put-up machines in the finishing plant. The inks may be of almost any color, and the mark may be repeated at reasonable intervals.

We would not advise weaving colored yarns into the selvage unless the goods are to be subjected to relatively simple finishing operations that will not cause the colors to bleed out or mark off.

Useful Accessories For Textile Mills

▶ To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.

Rapid Swatch Mounting

An automatic swatch-mounting process capable of mounting up to 50 cloth or plastic swatches simultaneously has been developed by Matherson-Selig Co., 420 Lexington Ave., New York, N. Y. Savings over hand mounting of swatches are said to reach as much as 65%.

Cards up to 18 in. high and 18 in. wide can be processed. Other folds can be added on as needed.

The machine for mounting the swatches is not available, but individual mill jobs are done on a contract basis, the price depending on the size of the booklet, the type of fabric to be mounted, and the number of booklets ordered. (U-1)

Stretchable Neoprene Overshoes

Neoprene rubbers, made without any fabric lining for men who wear overshoes on the job, and especially for men

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PHENOMENAL PRODUCTION — per sq. ft. of conveyor drying area . . . continuous, automatic, trouble-free, economical operation — year in, year out . . . takes amazingly small floor space.

SIMPLICITY OF DESIGN AND OPERATION — easy to assemble . . . curved top provides continuous air flow (no corners to "pocket" air currents) . . . adds to compact, streamlined appearance . . . high velocity fans of latest design directly connected to standard-frame ball-bearing motors . . . so placed there is continuous cool-air-flow around them . . . vibration-free . . . heavily insulated, rugged housing . . . NO HEAT LOSS.

ACCESSIBILITY — quickly, easily cleaned . . . least down-time between lots . . . inspection panels conveniently placed, easily removed for inspection of work in process.

LOW STEAM CONSUMPTION — ingenious arrangement of coils, screen-protected . . . thermostatic controls . . . all add up to minimum operating cost. Designed for either low or high pressure steam.

WONDERFULLY QUIET OPERATION — s-m-o-o-t-h conveyor to carry fibres at all speeds . . . built of heavy-gauge steel sectional flights . . . variable speed, covered chain drives . . . Fisher-type rotary feed.

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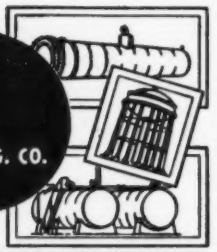

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KNITTING ARTS EXHIBITION — APRIL 27–MAY 1

who work around oils, solvents, acids, and other chemicals that damage ordinary rubbers, have been developed by Du Pont and put on the market by Tingley Rubber Corp., 903 Ross St., Rahway, N. J.

Field tests, according to the manufacturer, show that omission of the fabric exacts no sacrifice in the rubbers' durability, and in addition they stretch to size. They weigh only 9 oz. apiece. Elasticity of the neoprene upper assures a firm grip on the shoe so that it won't pull off at the heel.

The wearer can use the same pair of overshoes for street and work; he gets a snug fit in both cases in spite of the workshoe's larger size. Dirt that has gotten inside the rubbers at work is easily washed out by flipping the rubber inside out and sponging off the smooth inner surface. (U-2)

New Rotary Pressure Joint

Long life and maximum performance, with minimum servicing requirements, are built into a newly designed rotary pressure joint introduced by Anco, Inc., 1 Baker St., Providence, R. I. Continuity of operation for exceptionally long periods is predicted.

The rotary joint conveys steam under pressures up to 350 psi. and liquids under pressures up to 3,500 psi. while rotating at high speeds. They have a self-adjusting wear take-up and single- or double-race ball bearings.

The self-lubricating rotary seal and its mating part are so designed that efficiency of the sealing members cannot be affected by any misalignment or eccentricity up to 10°. An auxiliary seal prevents any loss of grease or condensate past the bearing. It withstands temperatures up to 600°. (U-3)

Improved Cloth Marker

An improved Kloth Marker will be introduced and made available at the Knitting Arts Exhibition at Atlantic City, N. J., this month. It uses a 7-in. burning blade that scorches an easily identified mark on up to 7 in. of material at one time and also seals the fiber ends to prevent the material from raveling.

Among improvements noted for the new model is the toggle switch, which has positions for on-off and high-low heat and which is conveniently located for easy thumb control. Light and well balanced, the cloth marker slides easily so that its shiny tapered edge slips under cloth edges smoothly without snagging.

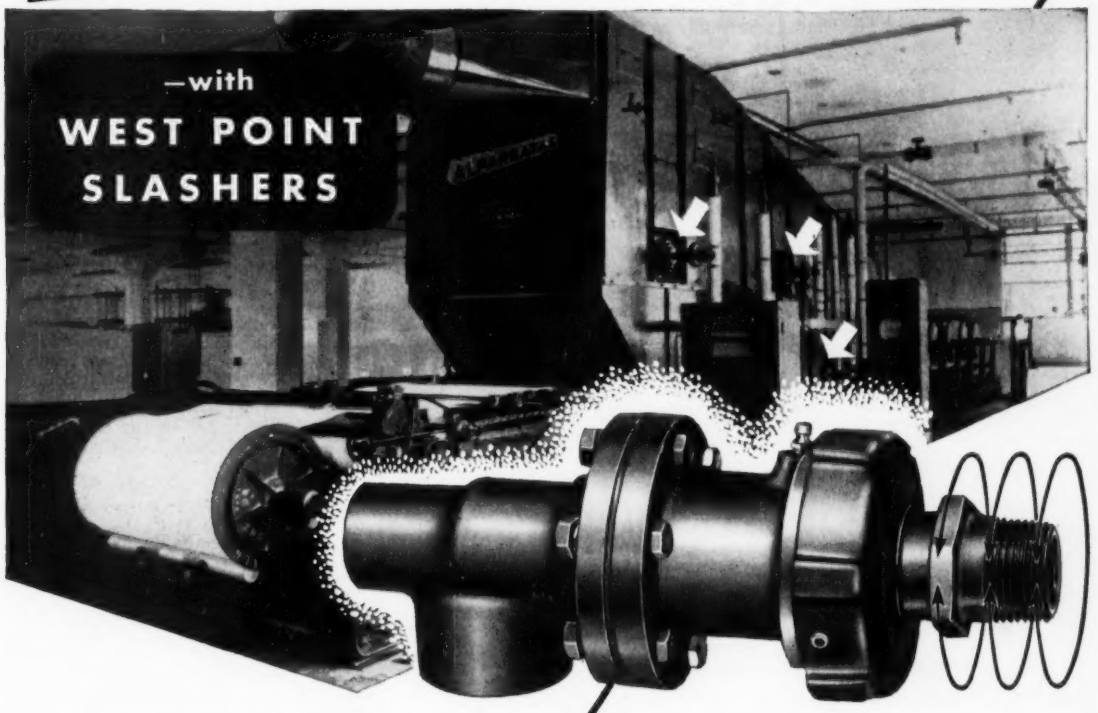
Further information on the marker can be obtained from Albert L. Pittelkow & Son, 15 Wilder St., Minneapolis, Minn., or from the company's representative at the Atlantic City knitting show. (U-4)

Electric Dehumidifier

A heavy-duty electric dehumidifier is now being produced in 1 and 1½-hp. compressor capacities by Air Conditioning Div., Remington Corp., Auburn, N. Y. It is priced at about half the cost of conventional air-drying equipment of equal capacity.

Called the Moisture Magnet, the self-contained unit automatically removes ex-

OUTSTANDING PERFORMANCE



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2. **Free-Floating, Low Torque Installations. Cuts Power Costs up to 50%.**
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5. **Low Maintenance; No Adjusting. Holds seal running or standing.**

The name "West Point" stands for carefully engineered designs and faultless performance in textile mill slashers everywhere. With West Point, as with other leading manufacturers, one key factor in performance is the selection of revolving joints.

To provide *trouble-free* rotating connections for steam supply and condensate drainage, West Point Slashers are regularly equipped with Barco Revolving Joints—*as indicated in the above installation.*

Let us send you complete information about Barco's new *improved* Type IBR Revolving Joints for Textile Machine Dryers, Slashers, Dry Cans, Sanforizers. *Catalog 300 on request.*

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No restriction as to size of batch, color, or prompt delivery. Our dyeing does not kill the lustre.

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★

cess moisture from the air of enclosed spaces within its range, near processes where increased air drying or protection from moisture damage is needed.

Except for an electric outlet, no installation is necessary. No chemicals, duct work, or air outlets are required. For drainage, the unit can be placed over an existing floor drain, or pails may be used for water collection. Caster-mounting of the unit for mobility is optional. (U-5)

Improved Diaphragm Valves

The addition of several new body, diaphragm, and lining materials to its line of packless diaphragm valves has been announced by Crane Co., 836 S. Michigan Ave., Chicago, Ill.

The valves are available with cast-iron, brass, aluminum, or 18-8 Mo bodies and disk holders, and with diaphragms and disk inserts of neoprene, Buna-N, and soft, natural, hard-rubber linings. Special valves for vacuum, oxygen, and acetylene service are also available.

The outstanding feature of the diaphragm valves is the separate diaphragm and disk construction. Since the diaphragm is not used for seating, it is not subjected to the cutting, crushing, and abrasion that might lead to rapid wear. Closure of the independent disk prevents escape of line fluids if the diaphragm should ever fail. (U-6)

Versatile Fork Truck

Development of the Octopus, a 4,000-lb.-capacity fork lift truck outfitted with a special carriage and attachments to handle nearly a dozen different types of loads has been announced by Baker-Raulang Co., 1230 W. 80th St., Cleveland, Ohio.

The Octopus can handle ordinary pallet loads, work as a side-shifting truck to spot loads close to columns and walls, haul and stack drums and rolls by means of clamps, dump and haul and stack tote-box loads, pick up a variety of pallet sizes after an automatic adjustment for proper fork-spacing, empty drumloads of material by hydraulically tilting drums in a vertical plane, and lift bales with a new spike-clamp attachment.

The truck is battery powered. It uses four attachments: a revolving head (semi-permanent), drum clamps, hydraulic drum up-ender, and clamp-spikes (all detachable in 2 min.). (U-7)

Gauge Easy To Maintain

The Ashcroft Maxisafe Duragauge, which combines protection to the viewer with easy access to the entire gauge movement and tube assembly for inspection, recalibration, or repair has been put on the market by Manning, Maxwell & Moore, Inc., Stratford, Conn.

An integrally cast wall separates the dial from the gauge movement and tube. A double spring-mounted safety-release plate covers the back of the case. The plate permits the discharge of the pressure media away from the viewer. Teflon coated, the safety-release plate fits on a rubber gasket and is held in place by a small knurled knob. Less than ½-psi. pressure forces it open.

Pressure ranges include 15 psi. of vac-

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Now a mid-west experienced company offers you this specialized service—saving you production costs, equipment costs, and freight charges.

We are at present serving a number of companies and have the facilities for handling volume work promptly.

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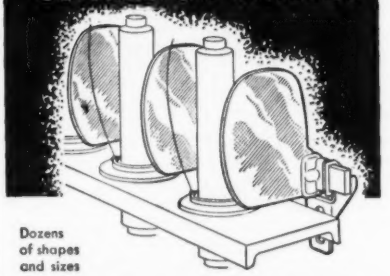

Dozens of shapes and sizes

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- Fewer ends down—some mills report 27% less
- Use two numbers lighter travelers for higher-strength yarn
- Polished aluminum blades stronger than steel—much lighter—cost less
- Non-slotted blades mean less wear on yarn, less lint, fewer slubs
- 7,000,000 in use by more than 400 mills

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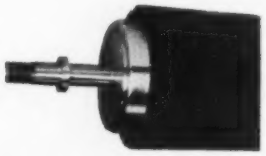


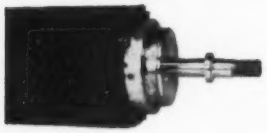
"FINESET"

Note the dense bristle and smooth surface of this typical In-Dus-Co furnisher brush.

This is an extremely light, metal-core brush with fine, even bristle, set in water-alkali-and-acid-resisting plastic, with no metal used in binding the bristle onto the metal core.

Many users report that it carries more color and cleans the engraved roll better than do tufted brushes.

TUFTED



With metal-core, and metal-wound —for those who prefer this construction. Incorporates specific improvements not found in other brushes of this type.

Both types of In-Dus-Co brushes may be dynamically balanced if specified. Bristles are renewable.

Send for the full facts about both these efficient brushes.

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BRUSH COMPANY
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uum minimum to 100,000 psi. maximum. Compound and retard ranges are also available. (U-8)

New Speed Recorder

New speed recorders for obtaining permanent speed records with dependability, economy, and convenience up to 1,000 ft. away from the engaged power are a recent development of Metron Instrument Co., 432 Lincoln St., Denver 9, Colo.

Known as Series-81M strip-chart recorders, they are General Electric Type CF5 instruments modified for use with Metron tachometer indicators and heads. Being inkless, the recorders have no ink to spill, evaporate, or blur, and no pen to start or clog.

Eighteen different speeds are available. The recorder can be set for feet per minute, revolutions per minute, cycles per minute, yards per hour, inches per minute, or any other measuring unit.

Charts are 4 in. wide and 65 ft. long and have 50 or 60 minor divisions, depending on the speed range selected. Duty can be continuous up to 30 days on a single roll. (U-9)

Conveyor-Wheel Lubricator

Lubrication of conveyor trolley wheels—formerly neglected or done by hand with a resultant conveyor stoppage, waste of manpower, waste of lubricant, and risk of injury to men performing the job—has been made automatic, certain, and safe by a new lubricator announced by Alemite Div., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago, Ill.

The new unit delivers a preset constant shot of either oil or lubricant to each trolley wheel on each side of the conveyor system, into which it is installed by means of a coupler clamp that is activated by the flick of a switch. When every wheel has been serviced, the system is switched off.

The entire unit is contained on a section of I-beam 37¾ or 40 in. long that fits into the conveyor track at any convenient spot in its length. Headroom of 22 in. over the top of the I-beam is required. The section should be in easy reach of the compressed-air line and a 115-v. 60-cycle electrical outlet. (U-10)

Tight-Seal Check Valve

Instead of depending on the conventional O ring for its seal, a new check valve made by Anco, Inc., 1 Baker St., Providence, R. I., has a valve seat formed of two hardened-steel pieces designed, ground, and lapped for long life. The valve, of seven parts in all, has only one moving part.

Designed for use with accumulators, the check valve prevents reversal of flow of air, oil, water, or chemicals and provides control lines with a minimum of pressure drop and positive sealing against return flow. No pressure is lost through the valve.

The check valve is produced in standard pipe sizes, and it can be made to withstand chemical reaction of the materials being handled. (U-11)

Corrugated Rubber Floor Mat

Corrugated mats up to 48 in. wide made of rubber links woven on 12-gauge spring-

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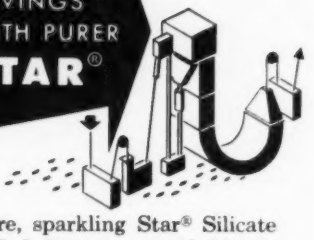

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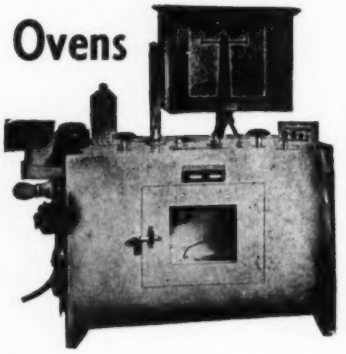
Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼" both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work. Write for details on EMERSON OVENS to fit your process.

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"BIG TEN" Features

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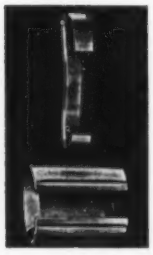

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steel wire that provide sure and comfortable footing have been brought out by General Scientific Equipment Co., 2700 W. Huntingdon St., Philadelphia 32, Pa.

The mats are for use where moisture, oils, acids, solvents, chemicals, and abrasives are likely to be on the floor. The rubber resists deterioration from them. The mats are easy to lay flat or roll up.

Mills can use the mats for positive under-foot protection on walking surfaces, loading platforms, washroom floors, elevators, cat walks, ramps, landings, approaches, side walks, inclines, aisles, and steps. Price is $2 per sq. ft. (U-12)

Improved Adding Machine

A new "live keyboard" adding machine whose figures add and print automatically as they are entered on the keyboard has been developed by National Cash Register Co., Main and K Sts., Dayton, Ohio. The new machine eliminates the need for the operator to depress the motor bar to have the amount that has been set up fed in. Every key is its own motor bar when needed.

For example, to add in $100, all you do is touch the "1" key in the hundreds column, and the figure instantly adds and prints. Or, in entering a large amount (like $1,235.00), you enter the 1-2-3 in the normal manner and then simply depress the last figure (in this case, the "5") all the way, and at once the full amount is added and printed.

The manufacturer believes that adding speed can be increased 50% because hand motion to and from the motor bar is now eliminated. (U-13)

One-Man Fire Engine

A new, powerful, one-man fire-fighting wheeled engine for putting out fires of the B and C type has been announced by American-LaFrance-Foamite Corp., 100 E. LaFrance St., Elmira, N. Y. It is a dry-chemical unit with a capacity of 150 lb.

Discharging a free-flowing quick-smothering dry nitrogen, the Model 150 is a companion unit to the company's two-man Model 350 with a 350-lb.-capacity discharge. Discharge range is 20 to 25 ft. Speed of discharge is regulated by a nozzle lever.

The new unit weighs only 480 lb. fully loaded and has two large wheels for easy rolling and manipulating into position. (U-14)

Power Where You Need It

A portable power plant completely controlled by push buttons is now available for mills that need a movable source of power for indoor or outdoor use. Manufacturer is Warner Electric Brake & Clutch Co., Beloit, Wis. The unit is completely controlled by electric brakes and clutches.

The machine can operate pumps, compressors, generators, hand tools, and any other machinery that can be transported from job to job. It has a 1,500-w. output and can operate on either a 110-v. current or an independent 6-v. system.

The push-button control box—about the size of a carton of cigarettes—can be brought directly into the hand-working

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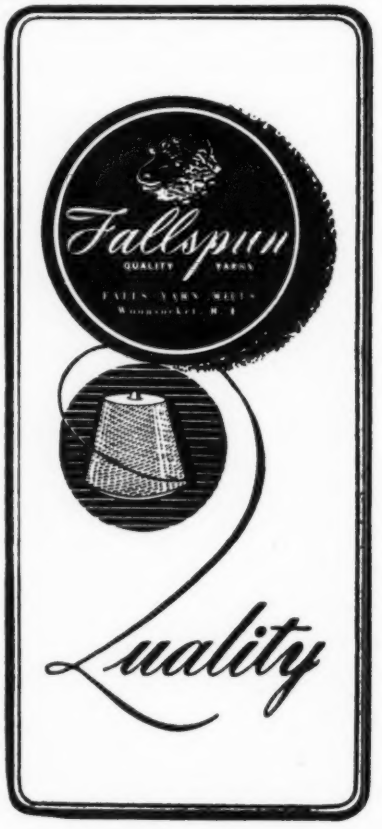

Chessietown people "stay put"

That's why many Chessietown industries show records of low labor turnover that would be amazing to employers in other parts of the country. This conservatism and stability shows up in Chessietown's employment picture.

Take Harold, for instance. Harold still lives in the same house his grandfather built. Succeeding generations have added on and modernized it till the old folks wouldn't recognize anything except the view. And the old place, once far in the wilderness, is only a few minutes drive from the paper mill where Harold works as a mechanic.

A man with Harold's background doesn't take a job one day and start looking for another job the next. He believes in repaying fair treatment with loyalty. This human element is one of the many reasons why new industries have been locating along C & O lines at the rate of one every three days for the past several years. Other reasons are nearness to raw materials and quick deliveries to most of the nation's markets.

Let our industrial experts prepare a PIN-POINT survey showing just how these advantages would benefit your particular business. Write to Chesapeake and Ohio Railway, Industrial Development Department, Terminal Tower, Cleveland 1, Ohio. All information is accurate, confidential and adequately supported with photos, maps, aerial surveys and vital statistics.

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area of an employee so that power can be applied and stopped when and as needed. (U-15)

Photomicrographic Camera

Its latest-model photomicrographic camera, the Model U (Universal), has been developed by Gamma Instrument Co., Inc., Great Neck, L. I., N. Y.

Among its features, some of them optional, are: (1) interchangeable backs, (2) detachable bellows, (3) 35-mm. accessories, (4) vibration absorbers, (5) reversing system for the light beam for instant changeover from transmitted to reflected light and vice versa, (6) quick-change bayonet mounts for objectives, (7) quick-change sliding platform for microscope and low-power stage, (8) extension arm with interchangeable brackets for light sources, (9) Macro adapter for Reflex back, (10) photomultiplier attachment for microspectrophotometry, (11) permanently installed microscope mirror, and (12) color-corrected light sources.

The space needed for the camera is not greater than that for an ordinary microscope with light source. (U-16)

Faster Cleaning of Pipettes

Viscometer cleaning-and-drying apparatus is now available from Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa., that makes the task of cleaning and drying pipettes fast and convenient, reduces breakage, and frees laboratory technicians for more productive work.

Used viscometers are placed over the machine's vertical capillary tubes. Each tube sprays the selected solvent into the viscometer at a preset pressure. Depressing the knob starts the solvent spray; releasing it stops the spray and substitutes an air blast that evaporates every trace of solvent.

A pressure regulator controls spray pressure to within close limits, producing, when desired, a spurt action effective in flushing out any oil coating the interior of the tube.

The cleaning solvent is held in a conveniently located 5-gal. pressure tank. (U-17)

Half-Die Collar Machine

The Amco half-die collar machine, now fully patented, is available from American Safety Table Co., Inc., North 8th St., Reading, Pa. Developed primarily to turn and shape woven collars, one half at a time, the machine has wide and successful application possibilities in the manufacture of knitted garments because of the current vogue for knitted sport shirts with precision-formed collars.

The new machine has a thermostatic heat-control unit calibrated in degrees Fahrenheit for correct pressing of different fabrics, plus additional heating elements controlled by a single switch. Specially designed pressing surfaces on each side of the die, pressure arms that are adjustable, a form carriage that can be either hand or foot operated, and an adjustable carriage on which the die blades are mounted and positioned are other features of the machine.

About 150-doz. collars are said to be an

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NYLON

This practical, "how-to-do-it" book presents the methods employed to process nylon in the various segments of the textile industry. Wide in scope, the book includes technical data from many sources, operating approaches, and procedures useful to persons in every area of the textile industry—from yarn producer to finisher.

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NYLON TECHNOLOGY

By KARL H. INDERFURTH

Textile Engineer; American Association of Textile Technologists

335 pages, 6 x 9, 113 illustrations, $8.00

The book deals with the approaches and techniques applicable to the processing of nylon staple on the cotton, worsted, and woolen systems of spinning. It discusses the processing techniques in regard to continuous-filament nylon as applicable to throwing, slashing, quilling, and the weaving, full-fashioned, and tricot industries. Significant chapters cover the employment of nylon staple for half-hose and outerwear fabrics . . . even touch upon the use of nylon in the tire industry. Other sections treat in detail the dyeing, printing, and finishing of nylon fabrics, in language the millman understands and can put to work at once.

Covers scores of topics, including—
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Partial Contents:
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- Spinning Nylon Staple on the Three Systems
- Preparation of Nylon Yarn by the Throwster
- Quilling and Weaving of Nylon Yarn
- Knitting of Nylon Staple
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- Finishing of Nylon Fabrics

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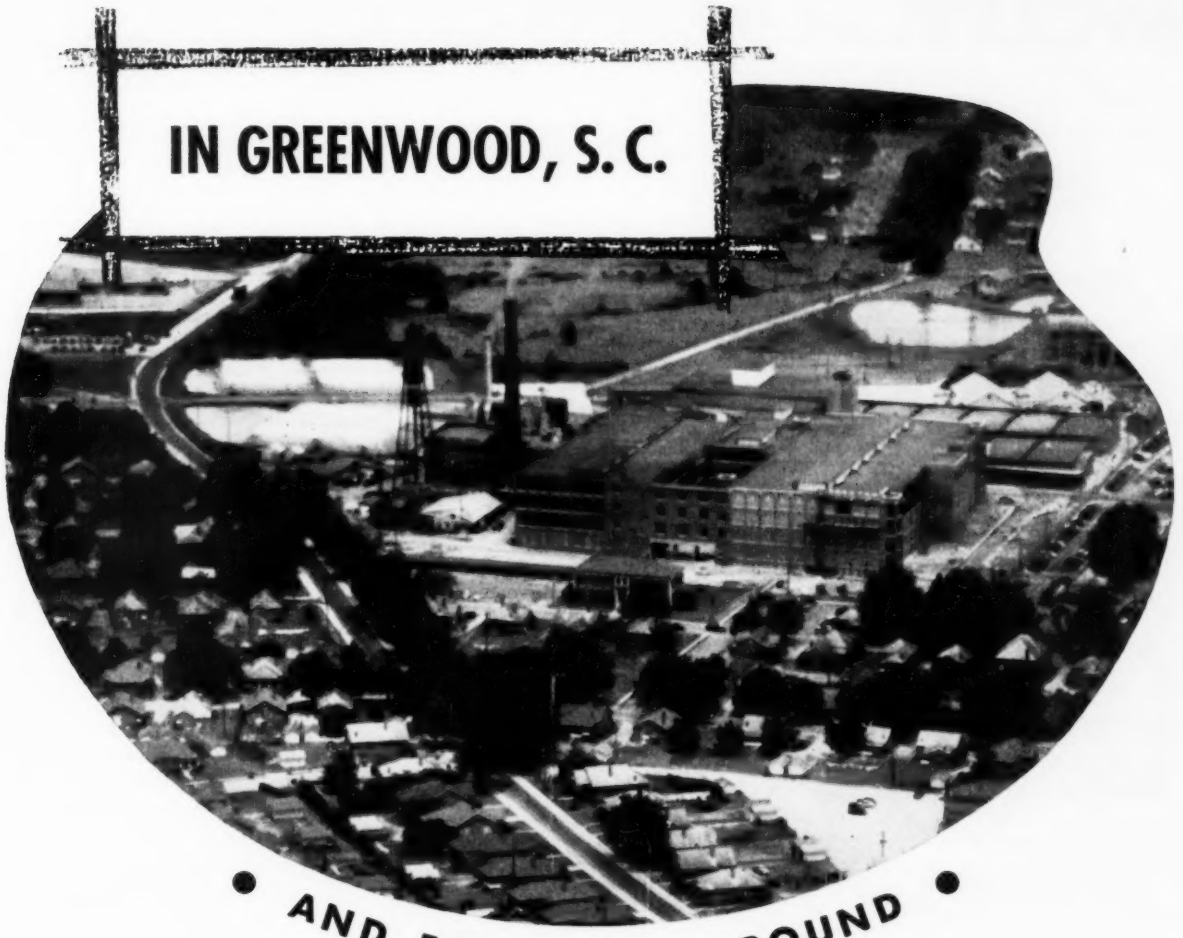

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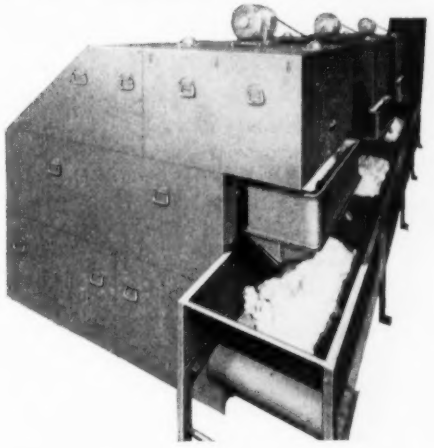
Ask for the facts so that you can derive the same advantages in your mill.



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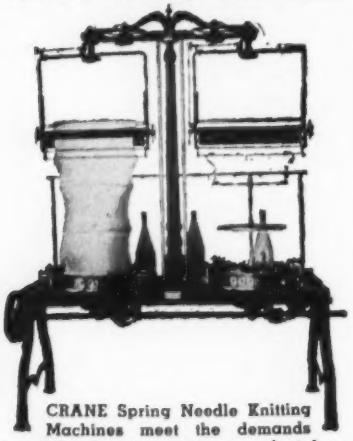

CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

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average production figure for the unit running an 8-hr. shift. (U-18)

Ultraviolet Marking Lights

The use of fluorescent markings instead of guide and pattern marks that have to be removed in the garment sewing room is not a new method. But new are the ultraviolet lights now available from Ultra Violet Products, Inc., 145 Pasadena Ave., South Pasadena, Calif., which can be used under normal sewing-room conditions, regardless of the amount of artificial or natural light available or not available.

Made in a variety of sizes—from portable lights for hand checking to lights covering a 10x12-ft. area—the lamps have special reflectors and utilize at the same time a new long-wave ultraviolet for maximum efficiency under all conditions.

Lights can be mounted on any type of sewing machine and adjusted to the operator's convenience. When not in use, lights can be swung out of the way—in any of six directions. (U-19)

Space-Saving Indicators

A series of vertical-scale indicating instruments, known as Mindicators, has been developed by Dickson Co., 7420 Woodlawn Ave., Chicago, Ill. Designed for panel mounting, the multiple-purpose gauges are used on graphic or process-control panel boards as receivers and as direct-reading gauges and thermometers. They require a minimum of space on the panel board.

Design, accuracy, legibility, and compactness of the instruments are outstanding. All units have a legible 4-in. scale, yet require a panel opening of only 5⅜x1½ in. for single units and 1⅞ additional width for each unit added to the multiple housing.

Thus a four-unit multiple requires a panel opening smaller in size than one average-size dial indicator. (U-20)

Tote Trucks in Tandem

Here's a new aid for the moving of calender, embossing, and other press rolls as well as similar products of great bulk and weight. Epco tote trucks, manufactured by Engineering Products Co., Inc., 122 S. Michigan Ave., Chicago 3, Ill., are used in tandem so loads can be moved around corners or along curved trackage with ease. Each truck has a ball-bearing turntable on the top, and the wheel hubs are made with heavy-duty-type Timken bearings. Safety was given top consideration in the designing and construction of the trucks. Two trucks used together save a mill on time, money, and chances of accidents and damage to rolls. Up to 15 tons can be carried. (U-21)

Rubber-Link Matting

Rubber-link mats made from 3-in. rubber and fabric links that are cut out of the inner carcass of heavy-duty truck tires and are woven on heavy-gauge, oil-tempered spring-steel wire are being made available from Koffleer Sales Corp., 3757 No. Racine Ave., Chicago, Ill. Mats are ⅜ in. thick, weigh 2¼ lb. per sq. ft., and can easily be rolled up for cleaning and

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Outstanding opportunity for men with chemical and sales background. Must be able to discuss chemical properties, product applications and process techniques intelligently with chemists, purchasing agents and operating personnel. Active imagination and proven sales ability essential. Age 25-40. Send complete resume of education and experience. Interview will be arranged with acceptable candidates.

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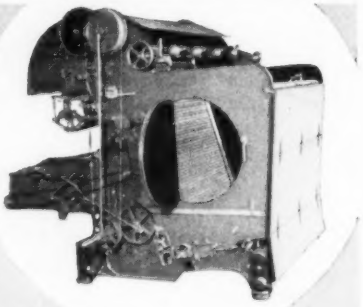
Long Beach 6, Calif.

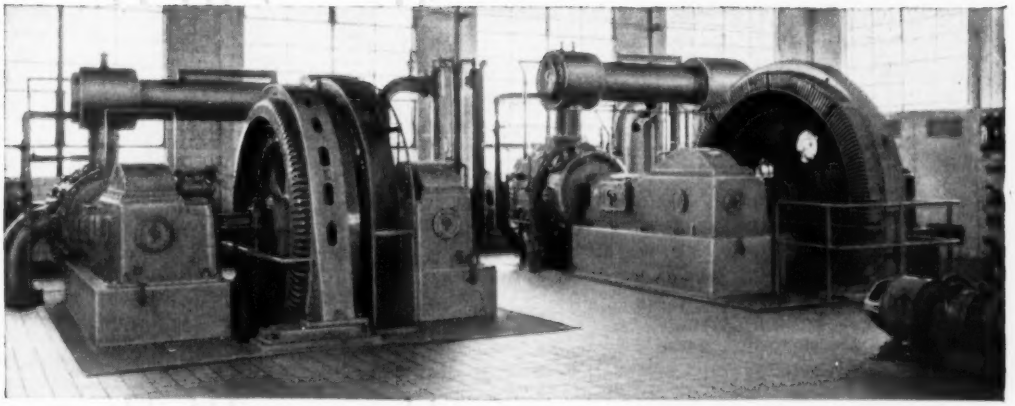


Specify Harwood Aprons
for BRAMWELL® FEEDERS

Geo. S. HARWOOD & Son
50 Lagrange St., Worcester 8, Mass.

NO CLOCK PUNCHING

for these compressors



That's right! There's no daily time limit placed on the work output of Chicago Pneumatic Class O-CE Compressors . . . they operate "around the clock" with a minimum of attention. Designed for continuous, year-in, year-out heavy industrial usage, these units are unsurpassed for a dependable air power supply at low cost. Built in sizes up to 2,000 hp, for pressures up to 5,000 lbs., they are available in horizontal, two-stage, water-cooled types with direct-mounted synchronous motor drive.

The Chicago Pneumatic Class O-CE Compressor is equipped with roller bearings, Simplate valves for low power consumption, streamlined air passages to cut down air flow resistance, CP Multi-Step Control for partial load economy, and a CP Intercooler for maximum heat transfer and low water consumption. Ask for Bulletin 726. *Chicago Pneumatic Tool Company, 8 East 44th Street, N. Y. 17, N. Y.*

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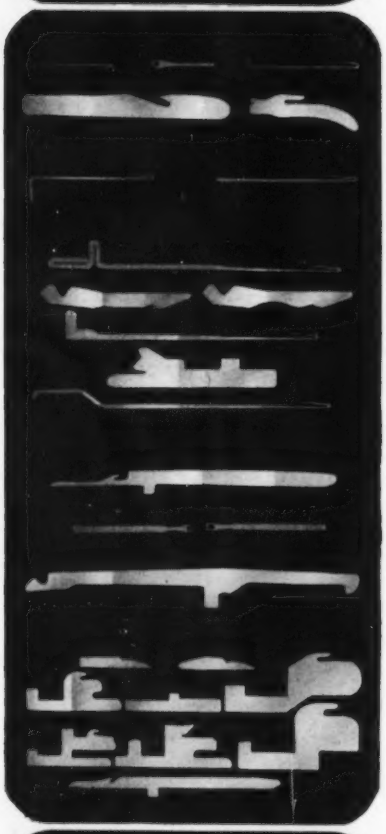
EST. 1874
SPRING BEARD
KNITTING NEEDLES



The Ives Company manufactures all known types of Spring Beard needles — for circular, full-fashioned and tricot knitting machines.

Also, Sliders, Sinkers, Jacks, Guides, Sley Points, Looper Points, Transfer Points or Quills, for Spring Beard and Latch Needle knitting machines.

Complete line, all gauges and styles of Needles, Guides, Sinkers and Sley Points for Reiner, Avisco and Whitin Tricot machines. Also equipped for complete casting and squaring service for Tricot machines.

NEW BRUNSWICK
NEW JERSEY

storage. They are skidproof and shock absorbing. Practically any size of square or rectangular mat can be supplied. (U-22)

Welded Seams Without Discoloration

A new and improved method (patent applied for) for removing heat discoloration from welded seams has been developed by Armco Steel Corp., 1939 Armco Ave., Middletown, Ohio. The method is especially effective on hard-to-get-at inside corners in sheet-metal work. An electrolytic process, it is reported to be simple and inexpensive to set up and operate. An a.c. power source is used. Equipment consists of a short length of copper rod, some rubber tubing, electrical wiring, clamps, a small step-down transformer, and a solution of 50% phosphoric acid. Discolored weld seams are treated at rates of 2 to 4 ft. per min. with the proper setup. The process leaves the weld area clean and bright, free of discoloration, and light scale. (U-23)

Wooden Shoes for Dyehouses

Wooden shoes have been brought out by Stahmer Shoe Co., Davenport, Ia., especially for employees who may have to stand around on wet floors in the dyehouse. The shoes have close-grained sanded maple soles 1¼ in. thick, padded with a cushion inner lining. The upper part of the shoe is heavy leather fastened to the wooden soles with copper wire. And there is extra precaution with double stitching and rivets at strategic spots. (U-24)

Air-Operated Butterfly Valve

A pneumatically operated butterfly valve for control of air, water, or steam flow has been developed by Industrial Div., Minneapolis-Honeywell Regulator Co., 4494 Wayne Ave., Philadelphia 44, Pa. Described as a Grad-U-Motor power unit, the valve operates on a controlled air-pressure range of 0 to 15 psi. Adjustable mechanical stops provided on the motor enable the wing rotation to be limited for special applications.

The valve is sized from 1¼ to 6 in., with screwed connections. Body, wing, and trim material are bronze. Maximum operating temperature is 250° F.; maximum pressure, 20 psi.

An optional accessory for the valve is the Gradutrol relay for positive valve positioning on throttling control applications. (U-25)

Open-Channel Flow Meters

A new line of Series-500 open-channel flow meters for measuring, recording, and controlling the flow of water, sewage, industrial-plant effluent, irrigation water, and other liquids has been brought out by The Bristol Co., 117 Bristol Rd., Waterbury, Conn. The new meters supersede the Model-40M line formerly manufactured by the company.

Flow is determined by measuring the head of liquid flowing through a flume or over a weir in the flow channel. This measurement of head is interpreted by means of a cam, cut to the equation of the weir or flume, into terms of flow, which is then recorded on a uniform chart and integrated if desired.

Two general types are offered. In the mechanical type, the cam mechanically moves the pen arm across the chart. The electric type employs the Bristol timed-impulse type of remote recording. This type is similar to the Metameter Telemeter, except that the cam is cut to the curve of the weir or flume involved. With this type, the record can be made at any distance from the point of measurement. The impulses are transmitted by a pair of conductors or equivalent circuit.

Cams can be cut to provide uniform charts for any of the various weir plates in general use. Automatic control can be either air- or electric-operated, according to the user's requirements. (U-26)

Towing Attachment for Unloading

Tractors are not always immediately available when needed to spot semi-trailers at a loading dock, and costly delays often result. To remedy this situation, a new attachment for fork-lift trucks has been developed by Industrial Truck Div., Clark Equipment Co., Circle Drive, Battle Creek, Mich. The device is designed to slip over the forks of the lift truck, where it is securely fastened by a chain. A cross member, having a 3-in. hole in the center, serves as the engaging plate.

The attachment is designed for use on 6,000- to 10,000-lb.-capacity fork-lift trucks.

In operation, the fork-truck driver merely drives up to the end of the trailer until the engaging plate is directly under the pin. As the fork and its attachment lift, the plate engages the pin and the trailer is lifted. It may then be pushed or pulled to its desired location. (U-27)

Hairnet-Visor Protector

The GS No.-41 hairnet-visor has been designed for protection of women workers in industrial plants by General Scientific Equipment Co., 2700 W. Huntingdon St., Philadelphia 32, Pa. Cool to wear and negligible in weight, the visors are available in five colors: white, black, red, green, and maize.

A full, wide back permits easy and complete coverage of the hair. The visors are adjustable to all head sizes. One size simplifies ordering and stocking. The opaque front eliminates glare from overhead lighting and reflection from shiny metals.

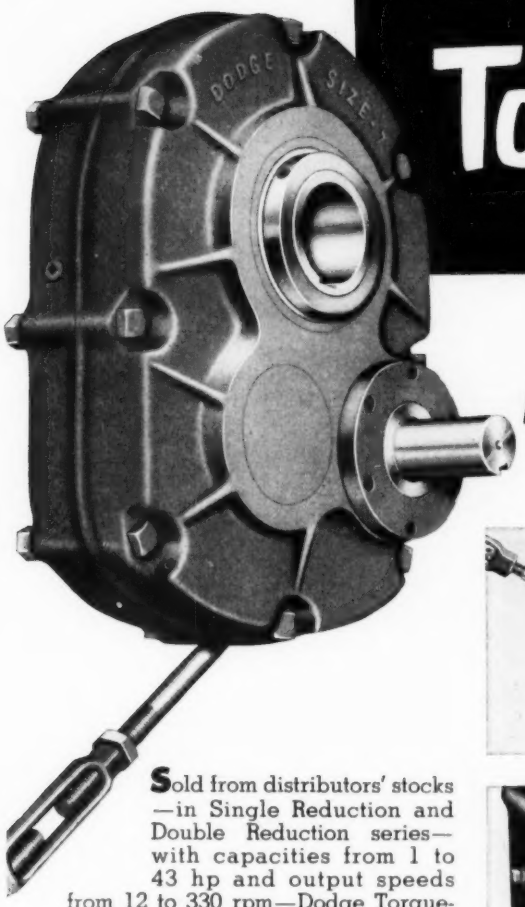
The visors are priced at $3 per dozen. (U-28)

Rotary Tag-Imprinting Machine

The introduction of a new tag and label rotary imprinting machine. The American 400, designed specifically to reduce marking costs and to increase marking speeds, has been brought out by American Tag Co., 150 Cortlandt St., Belleville, N. J. The new machine prints by the spirit duplicating process and has several features of practical benefit.

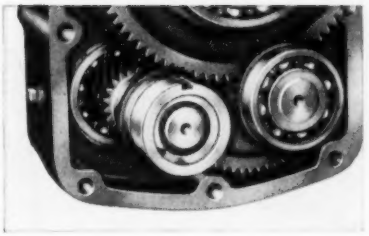
Copy to be imprinted is typed quickly and easily on any standard typewriter. A special carbon-like paper backing transfers to a "master sheet" the characters to be

Torque-Arm



The Most Complete Line of Shaft-Mounted Speed Reducers!

TRI-MATIC OVERLOAD RELEASE
Provides instant, positive protection for driven machines, motors and reducer itself. Automatically (1) loosens the belts, (2) cuts off power, (3) gives a warning.



TORQUE-ARM BACK STOP
Available from stock when required. Easily installed—sealed inside reducer housing. Simple, positive action prevents reversal.

Sold from distributors' stocks —in Single Reduction and Double Reduction series— with capacities from 1 to 43 hp and output speeds from 12 to 330 rpm—Dodge Torque-Arm is the new and modern idea in speed reducers.

No special engineering required. No foundation to provide. No flexible couplings. No sliding base. No lining up difficulties. No expensive installation. Stock Taper-Lock sheaves prescribed for each job to provide desired speeds. Application to other machines is practical and easy.

Unit is driven through any V-Belt Drive. Torque-Arm, fastened to any fixed object, anchors the reducer unit. Turnbuckle provides fast and accurate adjustment of belt tension.

Standardize on Torque-Arm, the speed reducer that saves you money.

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of Mishawaka, Ind.

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The exclusive 3-point fibre-flex suspension design of Super-Stroke Sweep Sticks gives outstanding wear . . . and the unique reversible feature doubles its life again! Made of finest, ski-quality hickory with pressure bonded fibre sides and inserts that are locked to the wood forever. For top performance, insist on Super-Stroke Sweep Sticks. Order today from

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Representatives:

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Morris R. Copeland & Co., Griffin, Ga.

imprinted. This printing master can be prepared by untrained personnel in a matter of seconds. The machine produces imprinted tags or labels at the rate of over 430 per min. Its rotary principle allows this high speed while maintaining a smooth-running, quiet machine. An operating speed in excess of 430 tags or labels per min. is approximately 2½ times the speed of equipment presently available, the company says.

Changing from tags to labels or to different sizes requires only the turn of a knob, with all internal mechanical changes being accomplished simultaneously. (U-29)

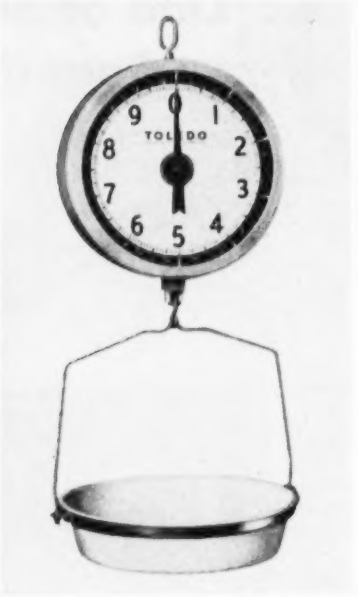
Reusable Hose-Line Couplings

A new line of couplings, developed by Lincoln Engineering Co., 5742 Natural Bridge Ave., St. Louis, Mo., has been brought out that the company says can be used over and over again wherever there are flexible hose lines. Other advantages are a Lok-Tite positive grip; faster, easier assembly; larger volume flow; and no hose extrusion. (U-30)

Textile Equipment News

(*Continued from page 130*)

New Hanging Scale Weighs Up to 30 Lb.



13¼-IN. DIALS on front and back of this gray-enamel hanging scale permit easy reading of weights from any position. An efficient air-cylinder control brings the indicator to rest quickly. Over-all height of the scale is 36 in.

The multipurpose scale, Model 2110, is manufactured by Toledo Scale Co., Telegraph Rd., Toledo 1, Ohio.

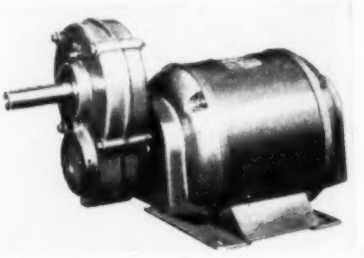
Circle T-17 on Reader-Service Card

Speed Reducer Converts Motors at Small Cost

A new speed reducer, the Model-3R3 Uni-Reducer, has been developed by Turner Uni-Drive Co., 3400 Terrace St., Kansas City, Mo., which permits the conversion of electric motors into geared-motor-type reducers by being able to slip onto the motor shaft directly. The usual coupling from the motor shaft to the reducer is eliminated.

The reducer is designed to fit standard motors from 1 to 5 hp., 1800 rpm.; and from 1 to 3 hp., 1200 rpm; 900-rpm. motors can also be fitted with the new reducer.

The unit has a reduction ratio of 3.04 to 1. A torque-arm take-up eliminates the need for slide rails.



NO COUPLING from the motor shaft to the reducer is needed in this motor-conversion job to a geared-motor type reducer. Motors from 1 to 5 hp. can be fitted.

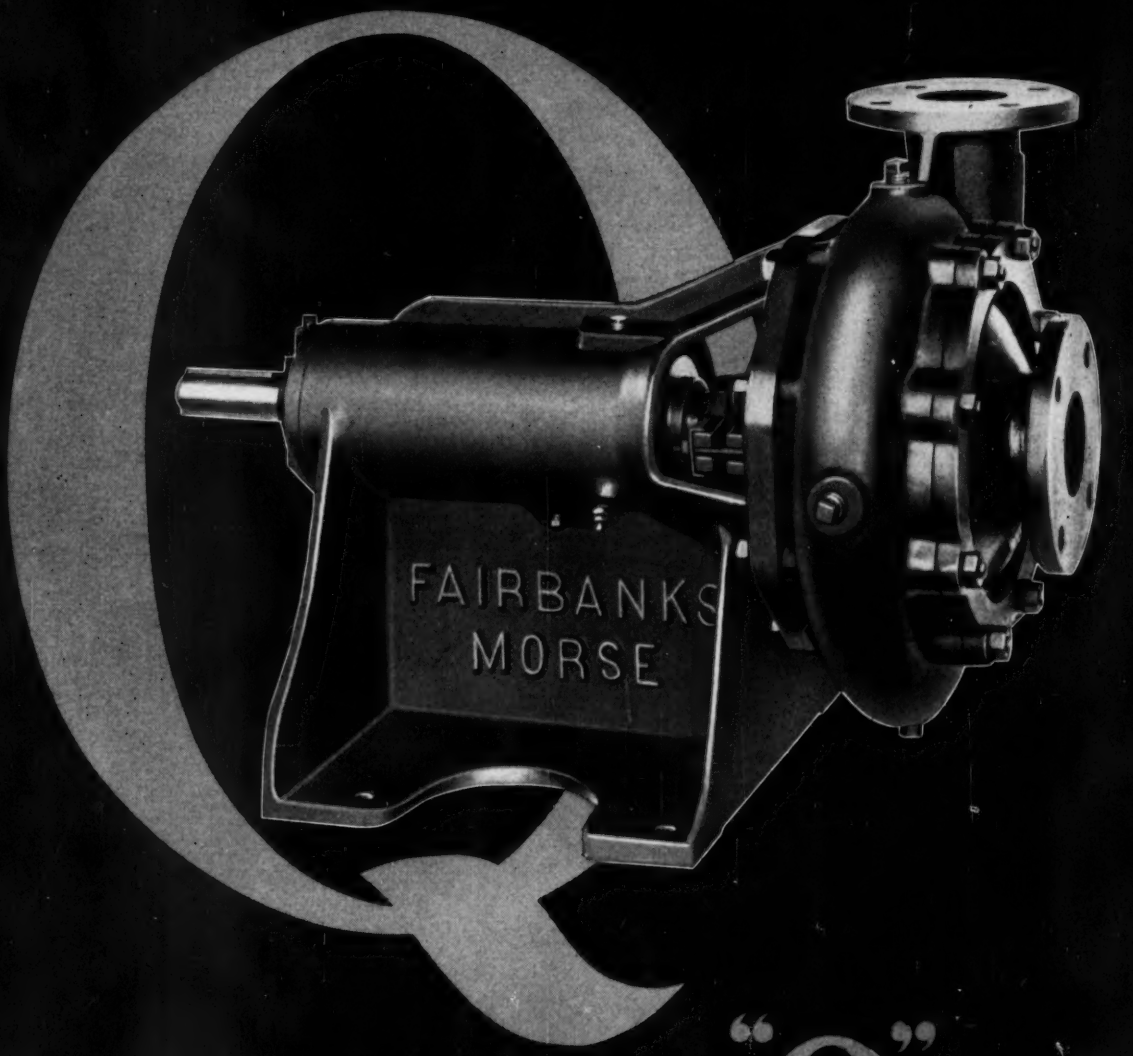
Circle T-18 on Reader-Service Card

Card-Flat-Chain Lubricator Eliminates Bucked Flats

A card-flat-chain lubricator designed to keep oiled the flat chains of most makes of cotton cards, with no more than occasional attention, has been developed by W. G. Jarrell Machine Co., 1200 S. Mint St., Charlotte, N. C. The lubricating unit is attached to the card side at the chain and works while the card is being ground.

Components of the chain-lubricating unit include a felt pad, metering needle, driving sprocket and retainer, and lubricating sprocket assembly. Enough oil is dispersed during a 7-hr. grinding job to lubricate the flat-driving chain just enough to eliminate "bucked" flats (flats that fail to lie down on flexible bend because of the inflexibility of a rusty chain).

Advantages of the unit, in addition to elimination of faulty flat settings at certain points, include increased



it's Your "Q"

Quality . . . that costs no more is yours when you choose Fairbanks-Morse Side Suction Centrifugal Pumps. Extensive engineering laboratories . . . production line methods with precision machining of all parts enable Fairbanks-Morse to offer you a side suction centrifugal with the design, workmanship and performance normally obtained only in highest quality split-case pumps.

Open type, single suction, high efficiency impeller . . . ball-bearing frame construction for long life and smooth operation . . . one-piece, solid cast frame . . . close-grained smooth cast iron volute . . . are among the many big pump features you'll find in these moderate priced side suction centrifugals.

For a "cue" to better pump performance, choose the pumps that spell quality with a capital "Q" . . . Fairbanks-Morse Side Suction Centrifugals. Fairbanks, Morse & Co., 600 S. Michigan, Chicago 5, Ill.

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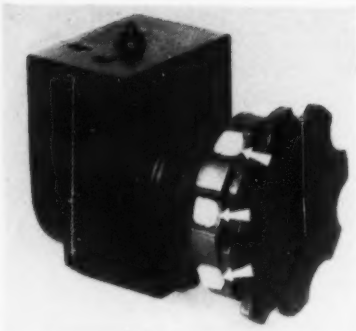


FELT PADS (arrows) are an integral part of the lubricating sprocket in this flat-chain driving assembly. Just enough oil is fed through the pads to the chain to keep it pliable and rustfree.

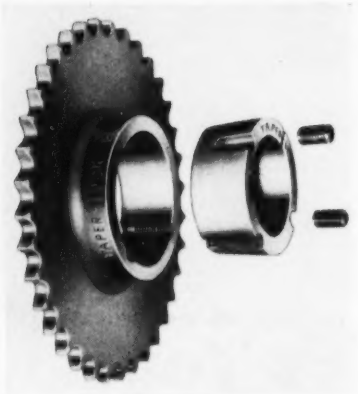
wear life of the flat chains and reduction in worm-gear replacements.

The felt pads give a metered amount of oil to the chain with each revolution of the lubricating sprocket. The lubricating sprocket makes about 8½ rev. per hr. on chains moving at 3¼ in. per min.

The unit is easy to install.

Circle T-19 on Reader-Service Card

Roller-Chain Sprockets and Bushings Easily Put On



EXPANDABLE OR CONTRACTABLE as needed, the Taper-Lock bushing fits into the similarly tapered bore of the sprocket and eliminates the need for exact fitting of shaft to sprocket.

No accurate grinding of shafts is necessary with the power-transmission chain-drive sprockets and bushings that have been put on the market for use with roller chain by Dodge Mfg. Co., Mishawaka, Ind. The new sprockets and bushings work together on shafting by means of the Taper-Lock principle, in which the split and tapered bushing expands and locks the sprocket to the shaft, or contracts and locks the two together, as required. Bushing and sprocket are locked together by two Allen set screws.

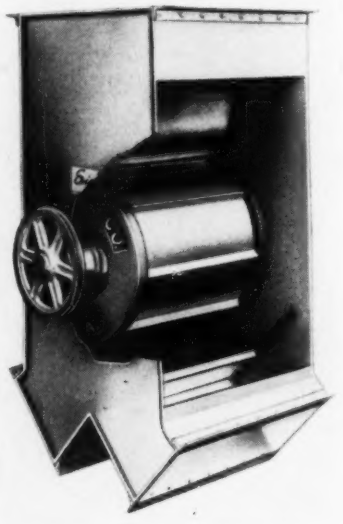
The new sprockets and bushings are available in a range of sizes that takes care of most industrial applications. Costly reboring of sprockets or turning of shafts to get an exact, tight fit can thus mostly be eliminated.

The bushing unlocks easily from the sprocket by means of an Allen wrench and can be used elsewhere and over and over again.

The sprockets have no flange or protruding parts.

Circle T-20 on Reader-Service Card

Permanent Magnetic Drums Have Changeable Sheave Sizes

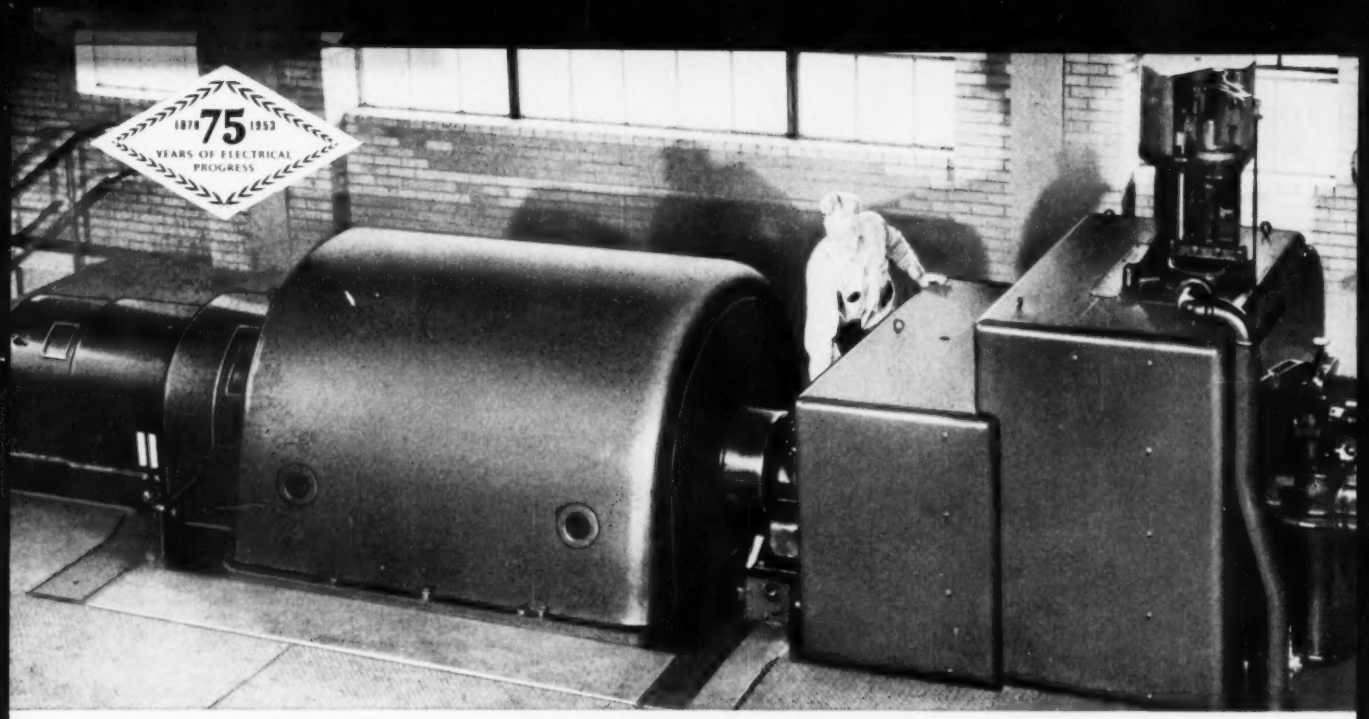


CUT-OUT of one of the improved magnetic separators in its housing shows the divided chutes underneath. This point in the line is a logical installation point.

Magnetic-drum separators that pull metal trash out of the line and maintain their Alnico-V magnetic strength for a long time have been improved recently by Eriez Mfg. Co., 1425 Grove Drive, Erie, Pa. The improvements include: (1) changeable sheave sizes for various operating speeds, (2) stainless-steel steels, (3) dusttight construction, (4) lightweight, rigid, cast-aluminum sides, (5) adjustable-feeder assemblies, (6) oil-sealed bearings, and (7) extended discharge ducts.

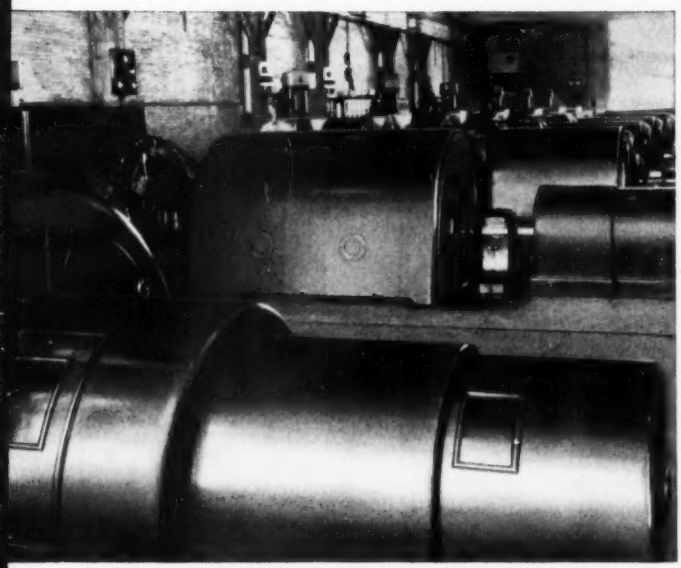
The improved magnetic drum is available with or without appropriate housing.

Known as Model DF-102, the magnetic drum is designed specifically to



General Electric 3000 KW turbine-generator at American Viscose's Marcus Hook, Pa., plant takes initial steam at 400 psig, exhausts to process at 20 psig.

American Viscose Gets Maximum Steam Utilization with G-E Turbine-Generators



Turbine hall at one of American Viscose's plants has eight G-E units operating under varying steam conditions for optimum thermal efficiency.

44 Units Reduce Boiler Steam to Process Pressures, Generate Power As By-Product

Over a period of thirty years, the American Viscose Corporation has installed in six of its plants, 44 G-E turbine-generators to deliver large amounts of steam used in digesters, heaters, and other processes. The turbines, rated from 400 KW to 7500 KW, operate on initial steam pressures from 200 psig to 850 psig.

Like many other companies which require huge amounts of process steam, American Viscose enjoys the economy of generating steam at high pressures, running the steam through turbines for economical by-product power, and extracting steam at the required pressure for plant operations.

If your plant uses process steam, why not take advantage of G.E.'s application engineering service. G.E. will work with your engineers to study and recommend ways to increase your plant thermal efficiency. Efficient, flexible, economical turbine-generators can mean savings in fuel dollars to you. Get more for your turbine dollar with G-E turbine-generators. General Electric, Schenectady 5, N. Y.

256-4

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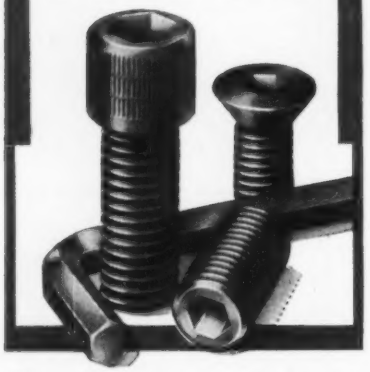
THE
Number One Name
In Socket Screws & Keys
ALLEN



Don't take it for granted that any hex socket screw is an Allen. There's only one way to take advantage of world famous Allen standards of precision fit and the strength and temper of special purpose Allenoy steel, in precision socket screws and keys: Specify genuine Allens, and be sure they come in the black and silver striped Allen package. Sold everywhere through leading Industrial Distributors exclusively. We will gladly give you the names of those in your locality and answer technical questions direct from factory Engineering Headquarters.

ALLEN ○ HEAD SET SCREWS: Achieve maximum *holding* power at the point by securing their *locking* action through uniform accuracy of fit, pitch diameter and perfect thread lead.

ALLEN ○ HEAD CAP SCREWS: Permit more compact design. Clean "pressur-formd" sockets and burr-free threads speed assembly work.

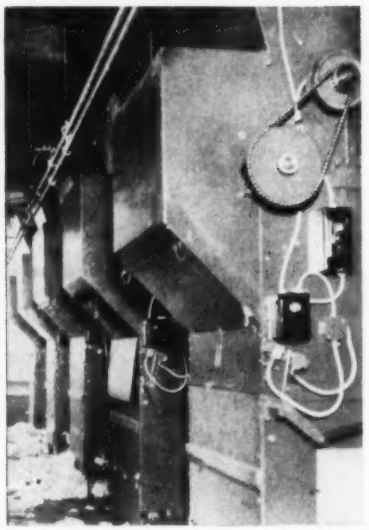
ALLEN ○ HEX KEYS: Size marked and made from special Allenoy steel for greater strength. Chamfered ends for quicker, easier insertion.

be installed at the discharge of an open or closed chute, spout, or conveyor. An adjustable check gate regulates and feeds stock evenly over the drum at the desired speed and depth.

The 12-in. drum has a ⅓-hp. and the 18-in. drum a ½-hp. Synchrogear 68-rpm., 3-phase, 60-cycle, 220-240-v. motor that can be mounted on either side of the separator.

Circle T-21 on Reader-Service Card

Improved Chute Delivers Wool As Needed to Bramwell Feeders



STRADDLING the normally open tops of Bramwell-feeder hoppers, these automatic chute-delivery wool-feed assemblies eliminate human negligence in keeping the correct amount of wool in the hoppers. Improved roving and yarn quality are reported as a result.

Automatic chute-delivery units of improved design that eliminate the possibility of hoppers running out of stock, for use in conjunction with its line of Bramwell woolen-card feeders, have been developed by George S. Harwood & Son, 50 Lagrange St., Worcester 8, Mass. The company builds the chutes to meet individual mill dimensions and specifications.

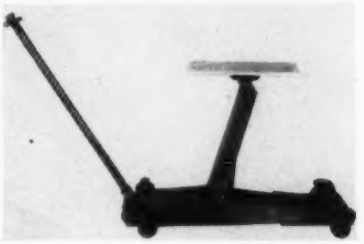
Stock descends by gravity, from storage bins on the floor above, to the apertures on the top of the feeder hoppers, through slightly sloping chutes that lead down between rafters and pipes as required by the building construction.

Mills that have installed the delivery chutes report improved roving and yarn quality and fewer ends down in both carding and spinning.

Circle T-22 on Reader-Service Card

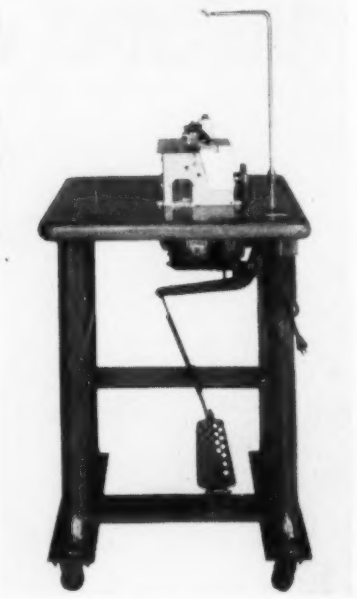
New Beam Truck and Butted-Seam Sewing Machine Developed

Standard Mill Supply Co., Box 1534, Providence 1, R. I., has developed and put the following new equipment on the market:



WARP-BEAM DOLLY can handle beams up to 28 in. in diameter and 90 in. in length. The trunk itself weighs 226 lb., has a capacity of 8,000 lb., and is available with either a 14½x26-in. or a 14½x40-in. cradle that swivels. Beams are lifted hydraulically 27 in. from the floor.

The trucks, called Model GA, are made in four different sizes. A locking device operating from the handle locks two of the four casters when a solid, stationary position is desired, as, for example, when raising the warps to roll onto a storage rack.



PERFECTLY BUTTED SEAMS, ⅜ in. in size, are made from one thread at 1,500 stitches per min. on this Style ZT-7 portable butted-seam sewing machine. The head is easily threaded, and no tension device is used or required on the unit. A cutting mechanism automatically trims off the waste edges of the goods going through.

Table tops are available in five different sizes. Shown here is a 22x24-in. top. Power is obtained from a Diehl built-in-clutch motor.

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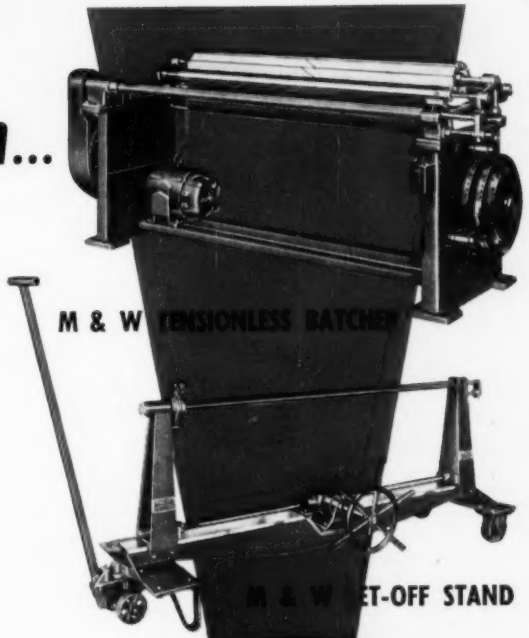
SEND FOR DATA TODAY These specialized M & W devices answer many long-standing demands that no other machinery can satisfy. Have us explain how many plants are profiting by their exceptional utility. Write for details without obligation.



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Textile Calendar

AATT, monthly meeting, Builders Club, New York, April 1, 1953.

Alabama Cotton Mfrs. Assn., annual meeting, Buena Vista Hotel, Biloxi, Miss., April 9 to 11, 1953.

AATCC, Piedmont Sect., Robert E. Lee Hotel, Winston-Salem, N. C., April 11, 1953.

Lyons Trade Fair, Fair Grounds, Lyon, France, April 11 to 20, 1953.

Amer. Soc. of Lubrication Engineers, annual meeting, Hotel Statler, Boston, Mass., April 13 to 15, 1953.

Carpet Fashion Bazaar, Carpet Institute, New York, April 13 to 23, 1953.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 17, 1953.

AATCC, Northern New England Sect., LTI, Lowell, Mass., April 17, 1953.

CATCC, Quebec Sect., annual meeting and dinner, Mount Royal Hotel, Montreal, April 17 and 18, 1953.

AATCC, Mid-West Sect., Netherland-Plaza Hotel, Cincinnati, Ohio, April 18, 1953.

TOE of Ga., carding and spinning meeting, A. French Textile School, Georgia Tech, Atlanta, Ga., April 18, 1953.

Southern Assn. of Science and Industry, regional conference, New Orleans, La., April 20 and 21, 1953.

22nd AMA National Packaging Exposition, Navy Pier, Chicago, Ill., April 20 to 23, 1953.

Fiber Society, spring meeting, New Orleans, La., April 22 and 23, 1953.

AIEE, Textile Div., conference, A. French Textile School, Georgia Tech, Atlanta, Ga., April 23 and 24, 1953.

Cotton Mfrs. Assn. of Georgia, annual convention, Boca Raton Hotel, Boca Raton, Fla., April 23 to 25, 1953.

AATCC, Pacific Southwest Sect., Nikabob Cafe, Los Angeles, Calif., April 24, 1953.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., April 24, 1953.

AATCC, R. I. Sect., Wannamoisett Country Club, Rumford, R. I., April 24, 1953.

Natl. Assn. of Hosiery Mfrs., annual convention and conference, Claridge Hotel, Atlantic City, N. J., April 27 and 28, 1953.

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 27 to May 1, 1953.

British Industries Fair, Castle Bromwich, Birmingham England, April 27 to May 8, 1953.

AIEE, Textile Div., conference, Sheraton-Plaza Hotel, Boston, Mass., May 1, 1953.

Industrial Waste Conference, Purdue University, Lafayette, Ind., May 4 to 6, 1953.

AATT, monthly meeting, Builders Club, New York, May 6, 1953.

Phi Psi Fraternity, 50th annual convention, Penn-Sheraton Hotel, Philadelphia, Pa., May 7 to 9, 1953.

AATCC, Hudson-Mohawk Sect., Jack's Restaurant, Albany, N. Y., May 8, 1953.

AATCC, Northern New England Sect., Andover Country Club, Andover, Mass., May 15, 1953.

Materials Handling Exposition, Convention Hall, Philadelphia, Pa., May 18 to 22, 1953.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., May 22, 1953.

AATCC, R. I. Sect., Providence Engineering Society, Providence, R. I., May 22, 1953.

AATCC, South Central Sect., Patten Hotel, Chattanooga, Tenn., May 23, 1953.

Textile Institute, annual conference, Llandudno, North Wales, May 25 to 30, 1953.

American Society for Quality Control, Textile Div., Convention Hall, Philadelphia, Pa., May 27 to 29, 1953.

ASQC, Textile Div., one-day technical session, Convention Hall, Philadelphia, Pa., May 29, 1953.

South Carolina Textile Mfrs. Assn., annual convention, Sea Island, Ga., May 28 to 30, 1953.

Canadian International Trade Fair, Exhibition Park, Toronto, Ont., Canada, June 1 to 12, 1953.

AATT, monthly meeting, Builders Club, New York, June 3, 1953.

AATCC, Piedmont Sect., Mayview Manor, Blowing Rock, N. C., June 12 and 13, 1953.

STA, annual convention, Mayview Manor, Blowing Rock, N. C., June 18 to 20, 1953.

ASTM, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 29 to July 3, 1953.

International Exposition of Fabrics, Fibers, Finishes, and Yarns, Waldorf-Astoria Hotel, New York, July 27 to 31, 1953.

U. S. Testing Co., summer refresher course in textiles and testing, Hoboken, N. J., July 27 to Aug. 14, 1953.

AATT, monthly meeting, Builders Club, New York, Sept. 2, 1953.

Fiber Society, fall meeting, LTI, Lowell, Mass., Sept. 10 and 11, 1953.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Sept. 11, 1953.

AATCC, Piedmont Sect., Hotel Charlotte, Charlotte, N. C., Sept. 12, 1953.

AATCC, national convention, Conrad Hilton Hotel, Chicago, Ill., Sept. 17 to 19, 1953.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Oct. 2, 1953.

AATT, monthly meeting, Builders Club, New York, Oct. 7, 1953.

Packaging Institute, annual forum, Hotel Statler, New York, Oct. 12 to 14, 1953.

Textile Machinery and Accessories Exhibition, Belle Vue, Manchester, England, October 14 to 24, 1953.

North Carolina Textile Mfrs. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 15 and 16, 1953.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Oct. 23, 1953.

AATCC, R. I. Sect., Providence, Engineering Society, Providence, R. I., Oct. 23, 1953.

AATT, monthly meeting, Builders Club, New York, Nov. 4, 1953.

AATCC, Northern New England Sect., LTI, Lowell, Mass., Nov. 6, 1953.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 6, 1953.

AATCC, Mid-West Sect., Hotel Bismarck, Chicago, Ill., Nov. 7, 1953.

TRI, annual meeting, Commodore Hotel, New York, Nov. 12 and 13, 1953.

AATT, monthly meeting, Builders Club, New York, Dec. 2, 1953.

AATCC, Northern New England Sect., Faculty House, MIT, Cambridge, Mass., Dec. 4, 1953.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 4, 1953.

AATCC, R. I. Sect., annual meeting, Sheraton-Biltmore Hotel, Providence, R. I., Dec. 4, 1953.

AATCC, South Central Sect., Patten Hotel, Chattanooga, Tenn., Dec. 5, 1953.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 11, 1953.

1954

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Jan. 15, 1954.

ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24, 1954.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to 30, 1954.

AATCC, national convention, Atlanta, Ga., Sept. 21 to 23, 1954.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1954.

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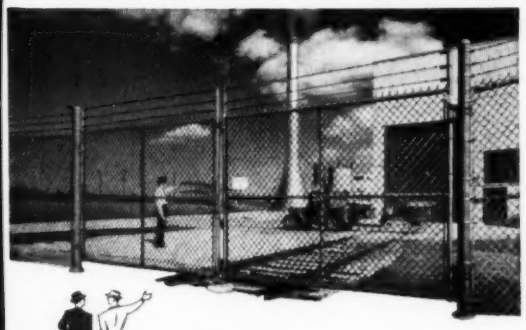

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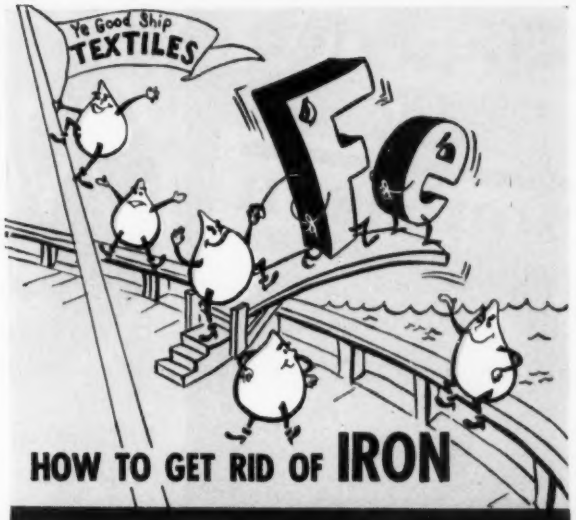

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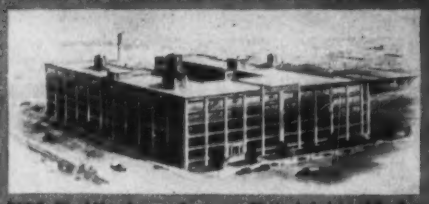
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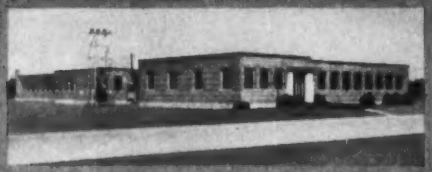
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News OF THE MONTH

WAGE ORDER APPEALED

The issue as to whether or not the government has the power to impose a single minimum wage for a whole industry, nationwide, under the Walsh-Healy Public Contracts Act, has been joined. Some 230 textile companies have asked for permanent release from the $1 cotton-and-rayon-mill and $1.20 woolen-and-worsted-mill minimum-wage order issued by former Secretary of Labor Tobin in January. The order was originally to have been effective Feb. 21 for any mill bidding on a government contract worth $10,000 or more.

Federal Judge Schweinhaut granted a stay of the order's effective date to the companies that asked for the injunction, and he enjoined present Labor Secretary Durkin from applying the Tobin order to the plaintiff mills.

Until this year, no industry had the right to appeal a Walsh-Healy Act decision. Provision for review was made by Congress last summer, and the textile industry is the first to ask that the issue be ironed out by the courts.

A THIRD NYLON PRODUCER

American Enka Corp., Enka, N. C., has been licensed by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., to manufacture nylon staple in a $2-million plant to be built adjacent to the company's rayon-producing facilities at Enka. The Enka organization is the second independent synthetic-fiber producer to be so licensed. The other is Chemstrand Corp., Decatur, Ala., already building a 50-million-lb.-capacity nylon plant near Pensacola, Fla., under a similar Du Pont license.

Both Enka and Chemstrand will be entirely independent producers. They have licenses covering the entire nylon process, beginning with the manufacture of intermediates and ending with the finished fiber ready for textile-mill use.

FIBERS FOR APPAREL FABRICS

The combination of natural and man-made fibers can be the answer to functional fabric requirements. But if we are to have better fabrics for specific end uses, we must keep these basic fiber properties in mind: (1) tensile strength, (2) stiffness, (3) resilience, (4) elasticity, and (5) toughness.

Thus concluded Walter Scholer, manager of the fabric-development department of American Viscose Corp. and new president of the American Assn. of Textile Technologists, in his address at the recent AATT symposium and luncheon in New York.

Cotton-type dresses and shirting fabrics, for example, cannot be made with 1.5-den. viscose without a soft, drapey fabric resulting. Cotton is about five times as stiff as rayon staple. So one has to resort to dimensional stiffness and use a 3- or 5-den. rayon staple.

Checking against the five basic requirements, the speaker said that viscose has good tensile strength, it can be stiff, it has adequate toughness—but it lacks good resilience and elasticity. So with viscose, acetate has been a good blending fiber because it has had these last two characteristics. But the polyesters provide even better resilience.

AATCC TEST-METHOD RESEARCH

The development of new test methods for evaluating newly developed properties of fabrics is the field that subcommittees of the general-research committee of the American Assn. of Textile Chemists and Colorists are looking into this year.

Standard methods for evaluating and testing the following are being sought: (1) the dry cleaning of printed fabrics, particularly flock prints and overprints; (2) stream pollution; (3) the scouring of grease wool; (4) the scouring of spinning lubricants from yarns; (5) the shrinkage of wool-knit fabrics other than hosiery; (6) ash in cotton goods; and (7) the removal of wool from blends.

Official association test methods in reprint form from the year book are available to AATCC members for $1.

QUALITY-CONTROL DISCUSSION

A one-day meeting to discuss textile quality-control problems will be held May 29 by the Textile Div., ASQC, during the society's annual meeting May 27 to 29. The meeting will be held at Convention Hall, Philadelphia, Pa.

The morning session will include

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. . . has been used successfully for years by leading mills everywhere and is no longer considered experimental.

Its added and consistent weight provides a shuttle 10% heavier than the usual dogwood or fibre covered shuttle, thus reducing "Throwing out" and the consequent breakage due to this action.

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Greatly strengthened side walls . . . Elimination of wood defects . . . Will not heat up . . . Use of less loom power due to greater weight . . . Resists splitting . . . Moisture proof in side walls. All of these plus many more advantages make the cost of Duraweld less over a period of time.

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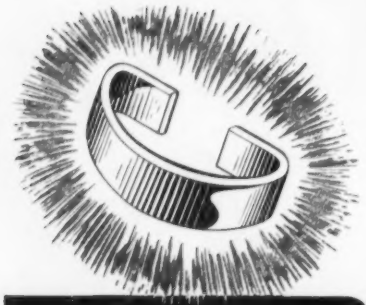

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NEWS *of the Month*

a paper on textile statistics by E. S. Rudnick of Wamsutta Mills and a panel discussion on evenness testing led by D. S. Hamby of N. C. State School of Textiles.

In the afternoon, A. G. Klock of Bigelow-Sanford Carpet Co. will deliver a paper on the textile industry, and Dr. J. Labarthe of the Mellon Institute of Research will have as his subject the consumer's stake in textile quality.

NEW MACHINERY-ASSN. OFFICERS

At the recent annual meeting of the American Textile Machinery Assn. in Boston, the following officers and directors were elected for the new year: president, Frederic W. Howe, Jr., president of Crompton & Knowles Loom Works, succeeding J. Hugh Bolton, president of Whitin Machine Works; vice president, W. Frank Lowell, vice president of Saco-Lowell Shops; secretary, James E. Hollis, Crompton & Knowles Loom Works; treasurer, Samuel F. Rockwell, Davis & Furber Machine Co.

Directors-at-large were all re-elected: Thomas H. West, Draper Corp.; R. G. Ross, Barber-Colman Co.; Ebert Butterworth, H. W. Butterworth & Sons Co.; and Mr. Lowell.

CHEMSTRAND'S NYLON PLANS

The new Chemstrand Corp. nylon plant at Pensacola, Fla., now under construction, will begin producing during the first quarter of next year, according to Murray H. Morse of the company's sales department, who spoke at the first 1953 meeting of the Throwsters Group of the National Federation of Textiles in New York.

A full range of deniers from 15-den. monofilament through 840-den. tire yarn will be manufactured. Full output of 50-million lb. annually will be reached as a production rate by the end of next year.

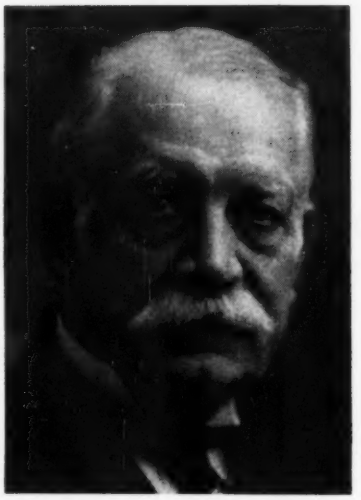
The Chemstrand organization seeks constructive advice and guidance from the throwsters concerning the best type of package to ship the nylon on.

1952: RECORD HOSIERY YEAR

American hosiery manufacturers reached an all-time sales record in 1952 with sales totaling 165-million dozen pairs. The increase equals some 12-million dozen pairs more than the previous year and 4-million dozen pairs above 1950, the previous record year.

According to W. F. Williamson, president of the National Assn. of Hosiery Mfrs., there was nothing in the general merchandising picture in 1952 that encouraged speculative buying. Inventories in the hands of both manufacturers and retailers were lower at the end of December than they were at the beginning of 1952.

Increases in actual sales to the consumer were therefore larger in every category than the shipment figures indicate.



ALEXANDER G. CUMNOCK, late founder of Lowell Textile Institute, was honored at the recent 50th-anniversary exercises of the school at Lowell, Mass. The new administration and auditorium building, construction of which is about to get under way, was dedicated to him at ceremonies attended by prominent New England textile and government personalities.

NEW SOVIET TEXTILE MILL

Construction on one of the largest textile plants in the Soviet Union is under way at Kamyshin on the Volga River north of Stalingrad, according to *Pravda*, the Soviet daily newspaper.

The new facilities are designed to produce over a million yards of high-quality cloth every 24 hours. Erection of the plant reportedly will "change the face of Kamyshin, which will become a huge industrial center." Other details were lacking.

THROWSTERS GROUP FORMED

A throwsters unit has been formed within the National Federation of Textiles, Inc., New York, to promote the interests and improve the trade practices of throwsters in general.

The executive committee of the

Destination for every textile executive in OCTOBER 1953

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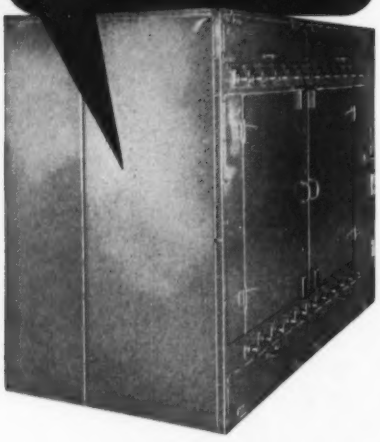

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GREENVILLE, SOUTH CAROLINA

NEWS *of the Month*

group consists of John A. Anderson of Tynan Throwing Co., Paterson, N. J., chairman; E. J. Schellenberg, Jr., of the Atwater Div., Hess Goldsmith & Co., Inc., Plymouth, Pa., vice chairman; and three other members: Carol Ferenbach of Leon-Ferenbach, Inc., New York; Paul Hemmerich, Sr., of Duffy Silk Co., Buffalo, N. Y.; and Leon J. Weil of Kahn & Feldman, Inc., New York.

The group will meet three or four times a year, at luncheon or dinner sessions, for which suitable programs will be worked up.

WARP-KNIT UNIT ELECTS LEADERS

More than 30 members of the warp-knit-fabric group of the National Federation of Textiles met in February to elect officers and to discuss standards of nomenclature, test methods, and tolerances for warp-knit fabrics. Efforts toward more standardization were approved by the group, and a vigorous follow-up was urged.

John P. Holmes of Celanese Corp. of America was elected chairman; Ora W. Hampton of Robbins Mills, Inc., vice chairman. Other executive-committee members include Kurt J. Winter of United Merchants & Mfrs., Inc.; H. S. Meltzer of Meltzer Textile Corp.; and Wirt L. Thompson of Burlington Mills Corp.

COTTON-PRODUCTION PLANS

Production in the United States of 12- to 12½-million bales of cotton appears to be desirable this year, Secretary of Agriculture Ezra Taft Benson said in a recent statement regarding the cotton situation. Since export demand has fallen off and since reserve supplies have been built up again, it is not necessary for farmers to produce as big a crop this year as in the past two years.

STRIPPING THE NEWER FIBERS

In the stripping of color from dyed hydrophobic fibers, two basically simple procedures have been found effective: (1) physical removal of color by the use of large volumes of dilute soap solutions and (2) chemical removal of color by use of sodium chlorite.

Dr. Malcolm J. Reider, industrial consultant, stressed this point before a recent Philadelphia Sect., AATCC, monthly meeting after presenting the group's second-prize-winning intersectional-contest paper on the subject, which was summarized in the December issue of TEXTILE WORLD.

BRITISH EXPORT RISE SHAKY

Prospects of raising exports of British cotton goods by nearly double the quantity shipped overseas last year, in accordance with the estimate made at the Buxton conference last September, are still very hazy, according to the British *Financial Times*.

On the surface, little appears to have been done to stimulate the imagination of British exporters, and a dearth of workable offers from overseas is reported.

The Cotton Board and others are trying to spur manufacturers' efforts, but individual firms are in the dark as to how the actual business is to be arranged. An "inner council" of spinners, weavers, finishers, and traders has tried to agree on a plan to sell bulk cotton goods to suitable markets, but little progress has been made.

Only in a few specialized overseas markets are many orders going through.

ITALIAN PROTEIN FIBER FOR U. S.

Merinova, a protein fiber produced by Snia Viscosa in Italy for 20 years, has been made available to American mills in staple form at 72¢ a lb. landed in New York.

The fiber is not designed to be used alone, but in blends. It imparts a wool-like hand and has practically the same bleaching and dyeing characteristics as wool. It comes in 20 dope-dyed colors that are designed to have excellent fastness to light, washing, creasing, bleaching, abrasion, carbonization, and perspiration.

Deniers available here will be 3, 5, 9, 18, and 27, ranging in length from 1⅝ to 3 in. in the 3-den. type and to 6 in. in the 5-den. type. Staple 4, 6, and 14 in. long will be available in the heavier deniers.

ILO WARNS TEXTILE MEN

International competition in textiles should not be allowed to lower individual-country standards and eventually cause unemployment in the world's textile industry, said David A. Morse, director general of the International Labor Organization at the recent Geneva, Switzerland, meeting of the ILO textile committee.

The ILO is ready to place at the disposal of governments anxious to promote new industries the best advice as to how to meet the labor problems involved in securing efficient production, together with fair labor standards.

"WATCH OUT, FELLAS, HERE COMES JED, THE SCREWDRIVER JOCKEY. DON'T LET HIM NEAR THE CARDS OR HE'LL HAVE THEM FULLERGRIPT BRUSH STRIPS OUT'N THERE AND A NEW SET IN AFORE YOU KIN SHIFT YOUR CHAW TO THE OTHER SIDE O' YOUR MOUTH, IT DON'T MAKE NO DIFFERANCE TO HIM THAT THE BRUSHES AIN'T EVEN WORE DOWN YET".
"YEH, TIMES SHORE DO CHANGE 'MEMBER 'FORE THE SUPER GOT ON TO FULLERGRIPT AND JED USE' TO HAVE TO LUG OUT THEM OLD WORE OUT BRUSHES ON THE HEAVY CORE? JED ALWAYS SWORE WE WUS EATIN' THE BRUSHES OFF IN THEM DAYS".

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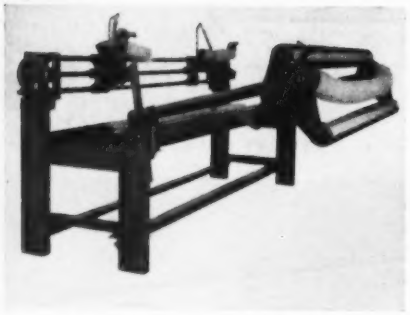

Batcher Expander and Precision Guider Unit for Tire Cord Fabric

All over the world Mount Hope Expanding Devices handle all types of wrinkling, creasing and spreading applications in textile mills. 80% of the mills in the United States use them, and nearly all machinery builders incorporate them on their machines.

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NEWS ABOUT Suppliers

Equipment Suppliers

American Lava Corp., Thread Guide Div., Chattanooga, Tenn., has made Joe Shacklett sales manager. Mr. Shacklett will serve all areas not covered by Jay S. Gosnell in the Northern and Eastern area and Joe E. Spearman in the Southeastern area.

Century Electric Co., St. Louis, Mo., has named Gunnar Moe assistant district manager of its New York City office. Mr. Moe has been associated with the firm's New York organization for 20 yr. He will direct the sales activity of the company in the area.

Hemphill Company, Pawtucket, R. I., has opened its new Southern Div. quarters at 2011 English St., High Point, N. C.

The John Hewson Co., New York, N. Y., has announced the appointment of A. G. Moore as its representative for the New Jersey area for sales, field application, and servicing of its line of electrical-control and testing equipment.

Alfred Hofmann Needle Works, Inc., West New York, N. J., has established for the convenience of Southern knitgoods manufacturers a stock of Groz-Beckert latch needles at Hickory, N. C.

Howard Bros. Mfg. Co., Worcester, Mass., recently added Bruce D. Hodges, Jr., to its Carolinas territory as a salesman. He will work with Carl M. Moore in the Gastonia, N. C., office.

Ideal Industries, Inc., Bessemer City, N. C., has purchased all the machinery and equipment of Gaston Textile Parts Co. of Dallas. All this equipment has been installed in the company's new building in Bessemer City.

James A. Jonas Products, Inc., New York, has been formed to supplant and take over the business of Pellissier, Jonas and Rivet, Inc., which is now in process of liquidation. All products and services of the former organization will be continued by Mr. Jonas.

KENNETH H. KLIPSTEIN, assistant general manager and head of the technical department at Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J., was named 1953 medalist for the annual award of the Commercial Chemical Development Assn.

Byrd Miller & Sons, Greenville, S. C., has announced that Byrd Miller, Jr., has rejoined the firm after a period of active naval service. He will travel the textile area representing the firm's accounts.

Minneapolis-Honeywell Regulator Co., Industrial Div., Philadelphia, Pa., has named Devon W. Fryback sales manager of the Eastern region. O. B. Pyle, Jr., was made industrial manager of the Mid-Atlantic area and Edward J. Klein industrial manager for the firm's Philadelphia branch office.

Multi-Clean Products, Inc., St. Paul, Minn., has completed negotiations for the purchase of the manufacturing facilities of the industrial vacuum-cleaner department of General Electric Co. The transaction includes all the production dies, patterns, fixtures, and inventory.

CREATIVE TALENT?

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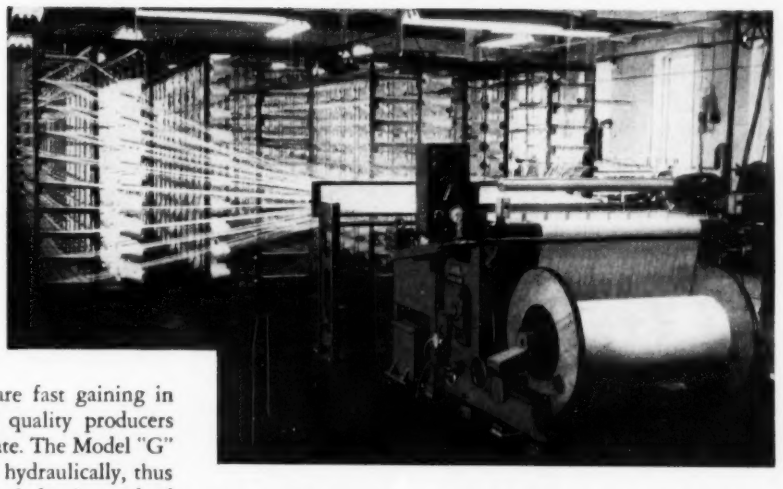
PRODUCTION INCREASED-- QUALITY UPHELD with Allen Hi-Speed WARPING UNIT



Allen high speed warping installations are fast gaining in popularity because they are high speed quality producers with great flexibility and are easy to operate. The Model "G" Warper controls density and end tension hydraulically, thus delivering larger warps of even and equal density and of uniform tension at absolute constant yarn speed. Standard heavy duty units are manufactured to accommodate beam heads up to 40" diameter. The magazine cone creel, because of its many exclusive features, has great productive capacity and can be furnished for any type yarn or size of package. Inquiries on this or other Allen equipment, are invited.

This typical installation at the Manchester Narrow Fabrics Company, Manchester, N. H., features the ALLEN Model "G" Warper with Intermediate Eyeboard Stand, and the ALLEN 1000-Active End Magazine Cone Creel. The unit is used in producing quality venetian blind tapes.

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News About **SUPPLIERS** (Continued)

Page-Madden Co., Mineola, N. Y., has appointed George M. Hand, Reading, Pa., as exclusive representative in Pennsylvania, Delaware, Maryland, and southern New Jersey.

Proctor & Schwartz, Inc., Philadelphia, Pa., has announced that it will have a substantial interest in the newly formed Redman Process American Corp. Proctor & Schwartz has worked with Mr. Redman for the last 10 yr. in the development of machinery for the Redman process—a method of shrinkage control for tubular-knit fabrics.

Product Sales, Inc., Whitman, Mass., will directly represent Machinecraft's Climax top rolls in the South as it already has been doing in the North and in Canada. To cover the added territory assumed, Product Sales has added three new salesmen: J. H. Canady, Montgomery, Ala., for the states of Alabama, Georgia, Louisiana, Mississippi, and Tennessee; Dudley Dunlop, Spartanburg, S. C., for South Carolina; and Ray McCauley, Charlotte, N. C., for North Carolina and Virginia. Frank Cotton has been promoted to sales office manager at the Whitman office. Richard K. Butler has been named vice president of the company.

Redman Process American Corp., 320 Fifth Ave., New York, N. Y., has been formed, with Earle E. West, former secretary of the Underwear Institute, New York, as its president.

Russell Mfg. Co., Middletown, Conn., has named the following new officers: Leo S. Sullivan, vice president in charge of automotive and aero sales; Peter F. Madsen, vice president in charge of belting sales; Bruce S. Williams, vice president in charge of material and production control; and A. Paul Smith, Jr., secretary.

Stanley Works, New Britain, Conn., has appointed Charles K. Nichols sales manager of the Magic Door Div. Mr. Nichols had been sales-promotion manager of the division for a year.

Steel Heddle Mfg. Co., Greenville, S. C., has appointed Henry P. Goodwin Southern district sales manager, with headquarters in Greensboro, N. C.

Supreme Knitting Machine Co., Inc., Brooklyn, N. Y., announced the opening of new, modern general offices at 94-02 104th St., Ozone Park, N. Y. The relocation, originally scheduled for late this summer, was speeded up because of a recent fire that partially damaged Supreme's facilities at the Brooklyn plant.

Taylor Instrument Cos. Rochester, N. Y., has made Ralph E. Clarridge chief engineer, succeeding Karl H. Hubbard, who was made technical director. Mr. Hubbard is also a member of the board of directors. Replacing Mr. Clarridge as manager of the application-engineering department is George E. Howard, formerly assistant manager.

U. S. Rubber Co., Textile

EDWARD H. LITTLE (left) has been made chairman of the board of Colgate-Palmolive-Peet Co., Jersey City, N. J. JOSEPH H. McCONNELL (right) was elected president and a member of the board.

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Mr. Wm. Montgomery
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ALBEMARLE, N. C.
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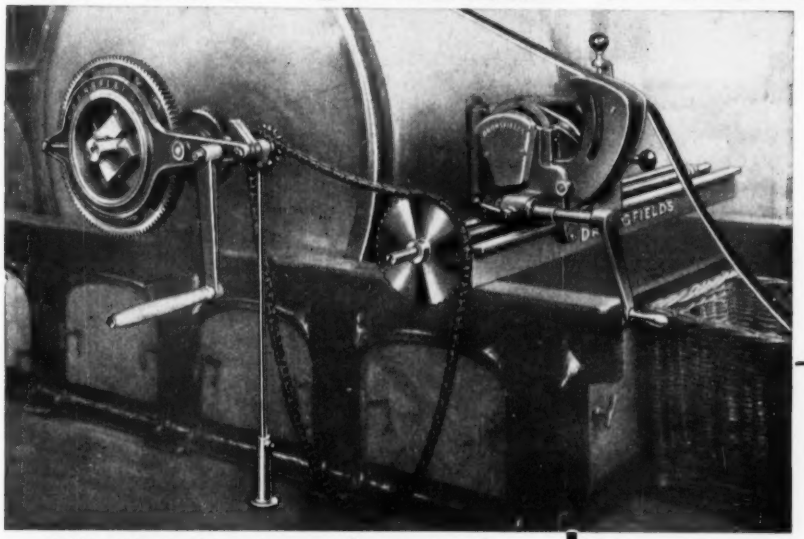

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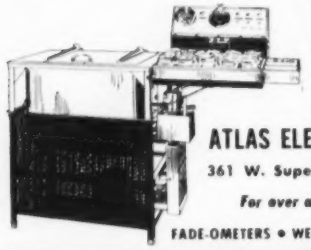
Research Model Launder-Ometers offer full facilities for testing product resistance to modern laundering methods. Available with container, capacities ranging from 20 pint jars to 6 half-gallon jars which accommodate larger samples. Speeds between 15 and 50 r.p.m. are attained with the varispeed drive.



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JUNIOR EMPIRE

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Sandusky, Ohio — New York

News About **SUPPLIERS** (Continued)

Div., New York, N. Y., has made three appointments in a reorganization move to effect a closer coordination of development and sales: Woodrow D. Johnson, merchandise manager of all textile products except the sale of yarns to the knitting and tufting trades; W. O. Jelleme, assistant merchandise manager, and B. D. Hubbard, commodity-sales manager in charge of special products.

F. W. Warrington Co., Charlotte, N. C., is Southern agent for the Fleet Line of finishing and dyeing equipment of Riggs & Lombard, Lowell, Mass. Territory that the Warrington Co. will cover includes Alabama, Georgia, Mississippi, North and South Carolina, Tennessee, and southern Virginia.

Whitehead Engineering Co., Atlanta, Ga., has appointed three new direct-sales representatives. Roy Schrimshire, Columbus, Ga., will serve spinning-mill customers in Georgia, Alabama, Tennessee, and Mississippi. South Carolina mills will be serviced by Coleman Co., Greenville, S. C., through Jim Coleman, Brad Dunson, and Gene Brigham. New England, New York and Canada will be covered by Matthews Equipment Co., Providence, R. I., with Verne and Stan Matthews, Charlie Burns, and Mike Pizar working out of Providence, and George Hand out of Limekiln, Pa.

Chemical & Yarn Suppliers

Allied Chemical & Dye Corp., General Chemical Div., New York, N. Y., has announced plans to build a large research laboratory at Morristown, N. J. The new facility will permit General Chemical to expand its laboratory research program and will replace the division's present research laboratory at Laurel Hill, L. I., N. Y. The new laboratory will be located adjacent to the company's central research laboratory.

American Cyanamid Co., New York, N. Y., has elected L. C. Perkinson vice president and G. C. Walker treasurer. Mr. Perkinson had been treasurer of the company since 1945 and a director since 1946. Mr. Walker had been assistant treasurer since 1951.

American Resinous Chemicals Corp. and **American Polymer Corp.,** Peabody, Mass., have appointed Schibley Solvents & Chemicals Co., Cleveland, Ohio, sales agents in the state of Ohio.

Celanese Corp. of America, New York, N. Y., has appointed Dr. W. E. Coughlin director of consumer services of the textile division. He will work closely with the drycleaning and laundry industries and the cutting-up trades and will engage in other educational activities. For the past 9 yr., Dr. Coughlin was a senior editor and director of the textile laboratory of *Good Housekeeping* magazine. From 1930 to 1944 he was with Celanese as research associate in the dry-cleaning and laundering fields.

Eastman Chemical Products, Inc., Kingsport, Tenn., from now on will market chemical products manufactured by Tennessee Eastman Corp. J. C. Stone, formerly executive vice president at Tennessee Eastman, is president of the new organization.

Emery Industries, Inc., Cincinnati, Ohio, has appointed John D. Farr to its development and service department. Mr. Farr has had experience in vinyl plastics and synthetic rubbers with B. F. Goodrich Co.

General Dyestuff Corp., New York, N. Y., has made Hugh C. Osborn technical representative of the Portland, Ore., office.

Glass Fibers, Inc., Toledo, Ohio, has made Thomas A. Collins, now executive vice president, general manager of the company. Mr. Collins will have headquarters at the home office, 1810 Madison Avenue, Toledo, Ohio.

The Hart Products Corp., New York, N. Y., has appointed Robert F. McKown manager of its Spartanburg, S. C., branch office. Mr. McKown recently resigned as general superintendent of the finishing plant of Ware Shoals Div. of Riegel Textile Corp.

News About **SUPPLIERS** (Continued)

E. F. Houghton & Co., Philadelphia, Pa., has elected John F. Maisch treasurer. Mr. Maisch has been controller of the company since June, 1950.

Industrial Rayon Corp., Cleveland, Ohio, has elected Gilbert W. Humphrey to membership on the board of directors. He fills the vacancy created by the resignation of George M. Humphrey to become Secretary of the Treasury of the United States.

Libbey-Owens-Ford Glass Co., St. Louis, Mo., has named Mark Joseph Wells field representative for superfine fiber-glass sales in the St. Louis industrial area and the Southwest region.

Metro Dyestuffs Corp., West Warwick, R. I., has elected Dr. Harry W. Grimmel president.

Metro-Atlantic, Inc., Centredale, R. I., has announced that E. R. Adair has joined their sales and service organization. His headquarters will be in Greenville, S. C.

Monsanto Chemical Co., Texas City, Tex., has started shipping acrylonitrile, an important raw material for acrylic fibers. Charles Allen Thomas, company president, and J. R. Mares, company vice president and general manager of the Texas Div., participated in ceremonies christening the first tank car of acrylonitrile to leave the plant.

Charles Pfizer & Co., Inc., Brooklyn, N. Y., has made citrazinic acid, a poly-functional pyridine compound, available in trial quantities to the dyestuff industries. The material, to be distributed by Pfizer under the name CZA, has never before been produced in quantity for commercial use.

HARRY E. NEW has been made resident technical-sales representative for Chemstrand Corp., Decatur, Ala. William W. Bowman has succeeded Mr. New as head of the cotton division at Textile Research Dept., American Viscose Corp., Marcus Hook, Pa.

Pittsburgh Coke & Chemical Co., Pittsburgh, Pa., has named William O. Neeb Philadelphia-area salesman for the fine-chemicals division. His territory will include Delaware, Maryland, most of Virginia, part of New Jersey and eastern Pennsylvania. His headquarters will be in Bala-Cynwyd, Pa.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has appointed Jack H. Waggoner technical assistant to the general manager of the fiber-glass division.

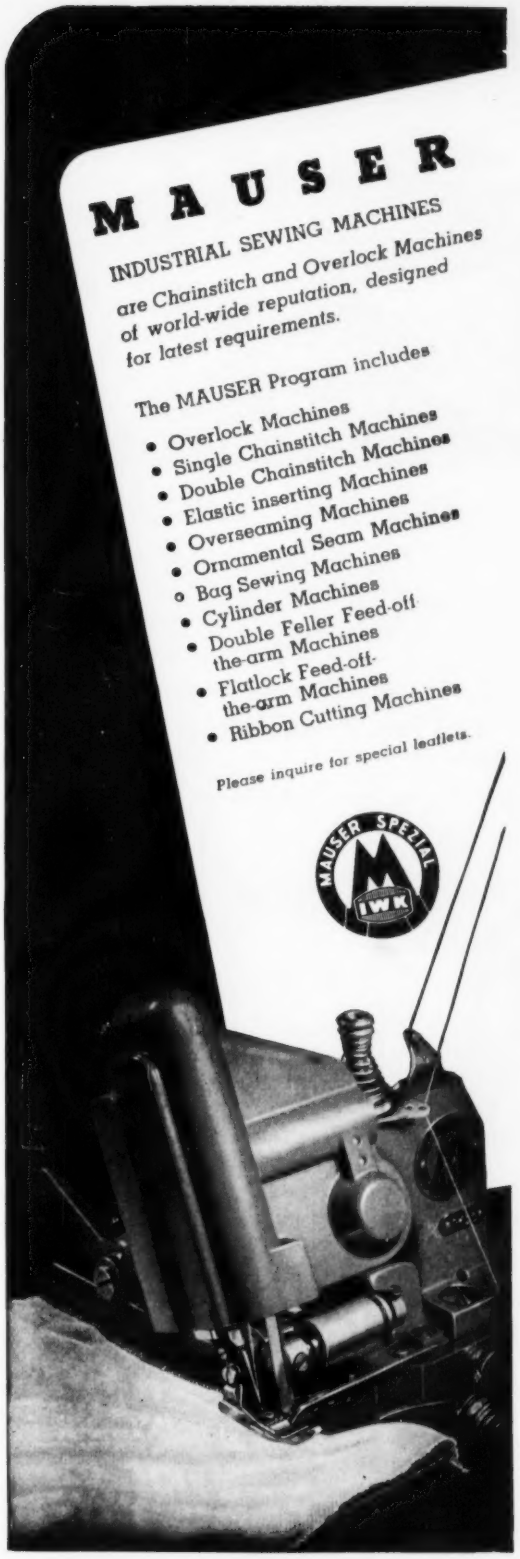
Stein, Hall & Co., Inc., New York, has made William B. Amos sales representative of its Atlanta office. Mr. Amos has been assigned the Alabama and Georgia areas. Robert E. Staples recently joined the sales staff and will work out of the Charlotte, N. C., office.

Other Services

Walter Kidde Constructors, Inc., New York, N. Y., has named A. Kingsley Ferguson vice president in charge of industrial engineering. Mr. Ferguson joined the Kidde organization in 1952 as assistant to the president.

Lockwood Greene Engineers, Inc., New York, N. Y., has appointed John R. Potter manager of its Boston office. Mr. Potter succeeds Howard E. Cousins, former vice president of the company in that office.

N. C. State College, Raleigh, N. C., has appointed Arthur Woodbury to the staff of its department of textile research. Mr. Woodbury was formerly assistant to the head of the staple-development department at the Celco research plant of Celanese Corp. of America.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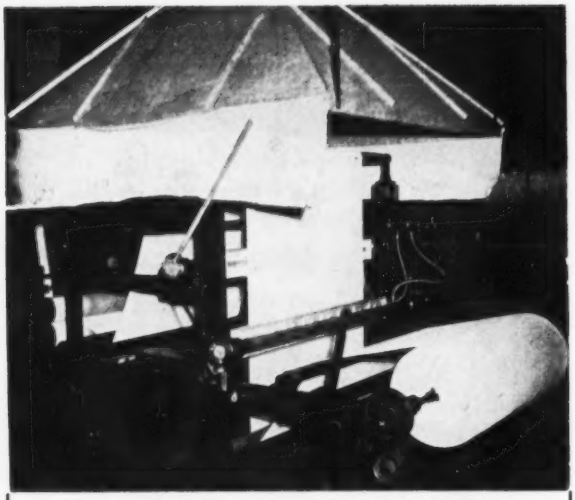

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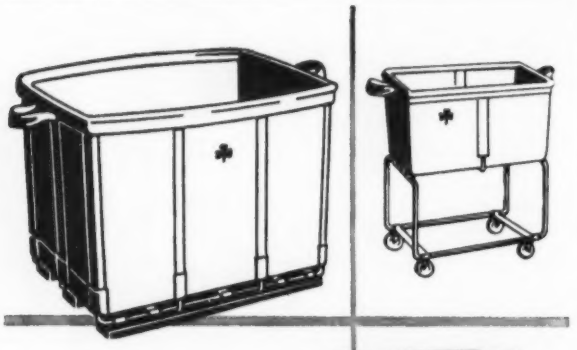

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NEWS ABOUT Mills

Cotton Mills

Borden Mills, Kingsport, Tenn., is installing a new air-conditioning system.

Cabin Crafts, Inc., Dalton, Ga., is constructing a new dyeing and finishing mill. The plant will be used for expansion of the Needletuft carpet division.

Clyde Fabrics, Inc., Newton, N. C., is constructing an addition to its plant in which spinning frames will be installed. The estimated cost is $40,000.

Indian Head Mills, New York, N. Y., has been organized to take over certain operations of Textron, Inc., Providence, R. I. James E. Robison is president of the new company.

Jamestown Mills, Inc., Jamestown, N. C., recently completed its first expansion program. Additional looms have been installed.

Linn Mills Co., Landis, N. C., plans to double its Concord, N. C., plant. A three-story brick addition will be built and new machinery will be installed.

Marion Mfg. Co., Marion, N. C., will install additional cards, drawing, and fly frames in the addition that is now under construction. Space is also to be provided for the widening of 200 dobby looms. A new cafeteria will also be built.

Paola Cotton Mills, Statesville, N. C., is planning a $100,000 expansion program. An addition will be constructed and new machinery will be installed.

Watts Mills, a division of J. P. Stevens & Co., Laurens, S. C., has constructed modern baseball facilities at Wattsville, S. C. This area will be known as Stevens Park.

Woolen and Worsted Mills

Abbott Worsted Co., Graniteville, Mass., plans to build a new branch mill at Bridgton, Me. Stewart Associates, Inc., Cambridge, Mass., is the architect and engineer.

Allenton Mills, Inc., Allenton, R. I., has leased space in the vacated mill of Rodman Mfg. Co., Lafayette, R. I.

American Woolen Co., Tifton, Ga., has awarded three separate contracts for alterations to its local plant to C. W. Pearson, W. B. Johns, and the Jones Construction Co., all of Tifton. Machinery is now being installed.

Associated Spinners, Inc., New York, N. Y., is reported to be investigating sites in Charleston, S. C., and Savannah, Ga., to be used as a future plant location.

B. & F. Combing Co., Woonsocket, R. I., recently organized, will be located in the Alsace mill building of Guerin Mills, Inc.

Delaine Worsted Mills of Associated Spinners, Inc., Gastonia, N. C., has completed a new one-story office building.

Deering, Milliken & Co., Inc., has an expansion program under way at its Hatch Mill, Columbus, N. C., that will increase production about 20%. Plans call for machinery similar to that now in use. The program is expected to be completed soon.

Globe Textiles, Meaford, Ont., recently purchased new equipment and is modernizing its plant.

Guelph Yarns Ltd., Guelph, Ont., a division of Harding Carpets Ltd., Brantford, Ont., recently installed additional

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WARP DRAWING MACHINES

On this machine the warp is drawn through reed, harness, and drop wires accurately, rapidly, and almost automatically. The mechanical motions are carefully synchronized to eliminate errors. The details of the pattern are accurately controlled by a punched metal sheet. After loading, all the operator does is watch to see that things go smoothly, and make minor adjustments of the carriage position.

In talking with the superintendent of a large South Carolina mill about his recently-installed Barber-Colman Warp Drawing Machine, an interesting story developed. It seems they did not have more than enough work for one shift, but wanted two crews trained in case of a lot of style changes. In order to find training work, they started bringing in warps in which crosses had accumulated or drop wires had been stepped over the yarn. They found that these redrawn and straightened warps *improved the weaving* so much that they are running the machine two shifts regularly in order to redraw *all* warps periodically.

A recent study of mills owning Barber-Colman Warp Drawing Machines shows that 25% of these mills have more than one machine, and that 48% of the machines sold have gone to mills that already had at least one. These brief statistics indicate merely that many of those who have the machines like them well enough to reorder.

Note, for the future: The 1954 American Textile Machinery Exhibition will be at Atlantic City, April 26 through 30, 1954.

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News About **MILLS** (Continued)

broad looms and spinning equipment. An extensive modernization program has already been carried out in the dyehouse.

Smith Mfg. Co. Ltd., Weston, Ont., is now operating in its new plant.

G. Whitaker & Co. Ltd., Peterborough, Ont., recently completed the construction of a new warehouse.

Synthetics Mills

Amoskeag Industries, Manchester, N. H., recently purchased the former plant of Textron, Inc. The buildings have been renovated and will be used for weaving and finishing operations.

Clarkesville Div., United Merchants & Manufacturers, Inc., Clarkesville, Ga., will begin an expansion program in its throwing department in the near future. About 10,000 sq. ft. of floor space will be added to the present mill building. Completion is expected in the early fall.

Duplan Corp., New York, N. Y., has purchased the former building of Saco-Lowell Shops at Charlotte, N. C. The building will be used as its mill headquarters office.

Stellar Weaving Corp., Montreal, Que., has made plans to install four additional Crompton & Knowles automatic looms in its new weaving plant.

Textron Southern, Inc., Williamston, S. C., has begun operations at its new throwing plant.

Knitting Mills

Artcraft Hosiery Mills, New York, N. Y., is planning to install additional 66-gauge full-fashioned hosiery-knitting machines. Its improvement program is said to include $1,000,000 for new machinery.

Ashe Hosiery Mills, Knoxville, Tenn., recently began operations at Maryville, Tenn., in a unit of the former Cherokee Mill. Frank Carroll is the manager.

Atlantic Knitting Mills, Inc., has moved its office to larger quarters at 39 W. 37th St., New York, N. Y. The plant has been moved to 141 W. 30th St., New York. The new arrangement will allow the company to increase production.

Charles H. Bacon Co., Lenoir City, Tenn., is planning a $1,250,000 expansion program at its plant in London, Tenn. The program includes building construction and new machines. New 66-gauge full-fashioned knitting machines are to be installed.

Bassett-Walker Knitting Co., Bassett, Va., is constructing a new dyehouse.

Burlington Mills Tricot Corp. of Canada Ltd., Granby, Que., has been formed by Burlington Mills Corp. Alfred B. Grossman, president of Burlington Mills Ribbon Corp. of Canada Ltd., is also president of the new company.

Campbell Hosiery Mill, Chattanooga, Tenn., has been sold by Clift Campbell, its founder, to his son, Charles Campbell, and associates.

Cooksville Hosiery Mills, Vale, N. C., recently obtained papers of incorporation. The company previously operated as a private business with Voyt R. Rudisill as proprietor. The plant operates 75 circular-knitting machines.

THE FORMER KLOPMAN CO. weaving mill at Siler City, N. C., has been purchased by Collins & Aikman Corp. The mill contains 150,000 sq. ft. of floor space. It is windowless and completely air conditioned.

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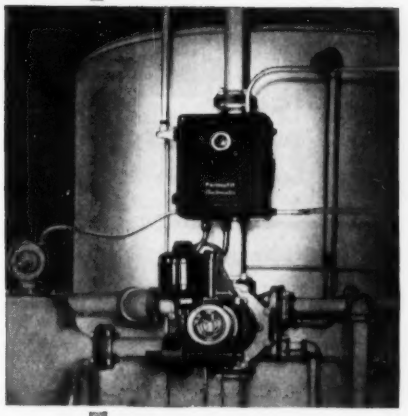

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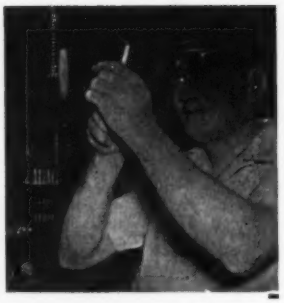

In the Durham Hosiery Mills—Straightening needles is one of many uses for Magni-Focuser in textile mills.

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News About **MILLS** (Continued)

Crescent Textile Co., Rockledge, Pa., is adding a new Reading 60-gauge, long-section, full-fashioned hosiery knitting machine to its hosiery division.

Dar-Mon Hosiery Mills, Inc., Charlotte, N. C., has obtained a charter with an authorized capital of $200,000. Dar-Mon bought the business of Kenrick Hosiery Co. The company plans to buy two 66-gauge machines.

Fenwick Hosiery Mill, Belmont, N. H., is erecting a three-story, 32 x 40-ft. addition as the first step in an expansion plan to double the plant's capacity.

Holt Hosiery Mills, Inc., Glen Raven, N. C., has begun a $400,000 expansion program. Eight new 66-gauge full-fashioned machines will be installed. The addition will contain 5,000 sq. ft. of floor space. Air conditioning will be installed.

Howard Knit Products, Inc., recently moved its machinery from Bessemer City to North Highland St., Gastonia, N. C.

Jantzen Knitting Mills, Portland, Ore., is constructing a 30,000-sq.ft. addition to its warehouse. The addition will be used for a stock and shipping room.

Paul Kiessling, New York, N. Y., and **Paul Ludwig**, St. Ann's, Ont., are installing knitting machinery and equipment in a building at Smithville, near St. Catherines, Ont. Knitted neckties and scarves will be manufactured. Hosiery will be produced after the firm has been operating for a while.

Mack Hosiery Co., Easton, Pa., plans to install two 51-gauge, 30-section full-fashioned hosiery machines.

Model Knitting Mills, Toronto, Ont., is proceeding with the construction of a three-story addition. The cost is estimated at $30,000. Harry B. Kohl, E. Toronto, is the architect. The general contractor is Godfrey Construction Co., Toronto.

Monroe Mills, Monroeville, Ala., plans a $200,000 expansion program. Additional floor space will be provided for a new dyeing department, warehouse facilities, and an enlarged shipping department.

Newton Glove Mill, Newton, N. C., has been granted a permit to build an addition to its plant. Herman Sipe & Co., Inc., Conover, N. C., is the contractor.

Newton Knitting Mills, Newton, N. C., has been leased by Albert Hutchens and his associates from R. S. Dickson of Charlotte, N. C. Mr. Hutchens is head of the new corporation that will operate under the name of Hutchens Hosiery Mills, Inc.

Parker Hosiery Mill, Old Fort, N. C., is constructing a 50-ft. addition to its mill that will house the boarding department of the new mill.

Roanoke Mills, Inc., Roanoke, Va., has been granted a permit to expand its warehouse facilities. The contract has been awarded to D. L. Bowman of Roanoke. The estimated cost is $50,000.

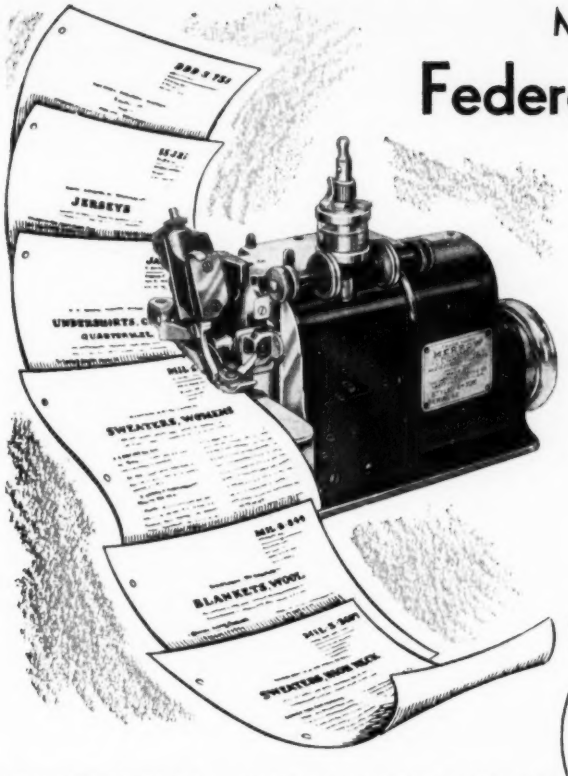
Sand Knitting Mills Co., Chicago, Ill., is building a one-story mill at Berlin, Wis.

Silver-Knit Hosiery Mills, High Point, N. C., will spend $500,000 in the next two years on equipment to expand production. A new dyehouse has just been completed at a cost of $180,000.

Shenandoah Knitting Mills, Shenandoah, Va., has begun construction of a $250,000 addition. The new structure will be one story, of brick and steel construction, and will contain 25,000 sq. ft. of floor space. Walter Bungardner is the manager, Elbert C. Stepp is in charge of construction. The plant is an affiliate of Chadbourn Hosiery Mills, Charlotte, N. C.

Spalding Knitting Mills, Griffin, Ga., is installing the Oil-O-Mist lubricating system on its Komet and Scott & Williams knitting machines. The company has also opened a new department for the production of boy's combed-cotton argyle socks and has installed 24 new Banner machines.

Spring City Knitting Co., Spring City, Pa., is reported to be planning to build a new plant at Hazleton, Pa.



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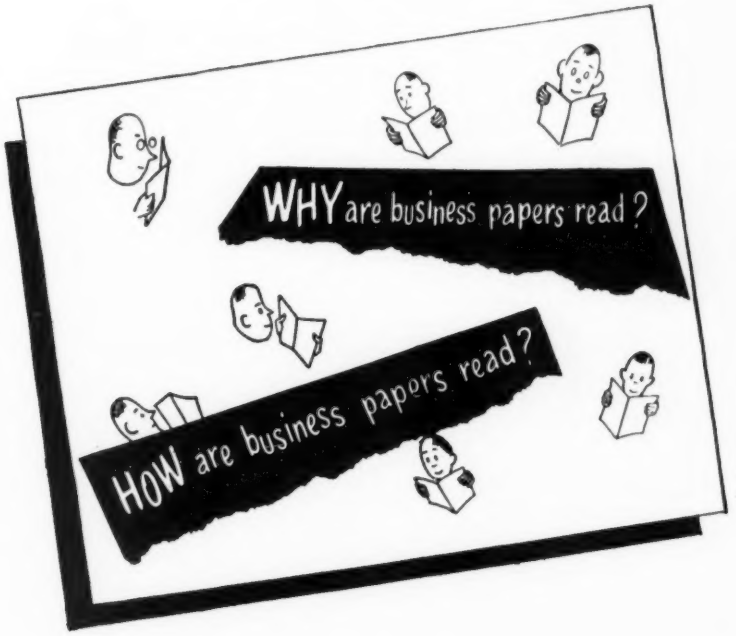

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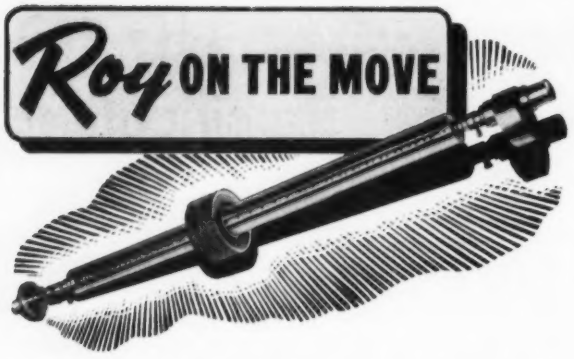

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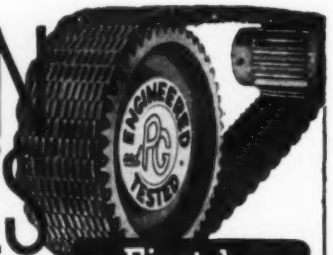

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News About MILLS (Continued)

Super Knitting Co. Ltd., La Providence, Que., has started reconstruction of its two-story, 100x45-ft. plant that was recently damaged by fire. The building program will include the installation of fluorescent lighting and hot-water, oil-fired heating. The cost is estimated at $25,000.

Trigg Knit Hosiery Mill, Cadiz, Ky., has begun the production of anklets for women and girls.

Turmen's Knitting Mill, Hendersonville, N. C., has received a $15,000 loan from RFC to purchase new equipment.

Dyeing and Finishing Plants

Bara Dyeing & Finishing Co., Paterson, N. J., recently organized, has acquired the premises of Dundee Dyeing & Finishing Co. The new firm is an expansion of the Inter-State Dyeing & Finishing Co.

Clyde Piece Dye Works, West Warwick, R. I., began operations recently in the building formerly occupied by the Perennial Div. of Allied Textile Printers. The firm does dyeing and finishing of rayon and acetate fabrics. L. Danello is president; H. A. Benjamin, treasurer; E. Bertrand, secretary.

Cowan & Shain, Inc., Haverhill, Mass., has purchased a major part of the former Pawtucket Mill on Winter St. It is understood that the firm's dyeing operations will occupy 20,000 sq. ft. out of the 150,000 sq. ft. of space acquired.

Coats & Clark, Inc., will construct a new finishing plant at Toccoa, Ga. J. E. Sirrine Co., Greenville, S. C., is the architect-engineer.

Halifax Corduroy Ltd., has moved to its new plant at 2125 Rembrance Rd., Lachine, Que. G. Dahan, president, is in charge of production.

Lee Dyeing Co. of Canada Ltd., an affiliate of Lee Dyeing Co., Johnstown, N. Y., will begin operations soon in the building formerly occupied by Canadian Master Prints Ltd., Lachine, Que. New equipment will be installed. Reginald Menzer is executive vice president and general manager.

Miscellaneous Mills

Elastic Threads, Inc., East Providence, R. I., plans the erection of a new plant to be used for the manufacture of rubber thread. Robert Alexander will be the superintendent.

Warren B. Finn, Jr., Lafayette, R. I., purchaser of the Lafayette Mill of Rodman Mfg. Co., will install 16 lace machines on the first floor of the main mill building. The company will be operated either by Nottingham Lace Co., West Warwick, or by a new corporation to be formed.

Narrow Fabric Co., Reading, Pa., is adding equipment to permit the production of woven nylon and rayon items for the underwear trade.

Parflex Rubber Thread Corp., formerly of Philadelphia, Pa., has leased 27,000 sq. ft. of space in the plant formerly occupied by Providence Dyeing, Bleaching & Calendering Co., Providence, R. I. Machinery is now being installed.

Foreign Mills

West German Textile Research Institute has erected a new building in Reutlinger, near Stuttgart, Germany, that will house the research and testing laboratories and facilities of the Stuttgart Technical School.

Indian Planning Commission, New Delhi, India, is reported to be considering the modernization of India's jute mills.

Sind Government Industrial Trading Estate, Hyderabad, Pakistan, is completing the textile mill that was started last year. The plant has 10,000 spindles. Later 15,000 additional spindles and 500 looms will be installed. The machinery is reported to be coming from Spain.

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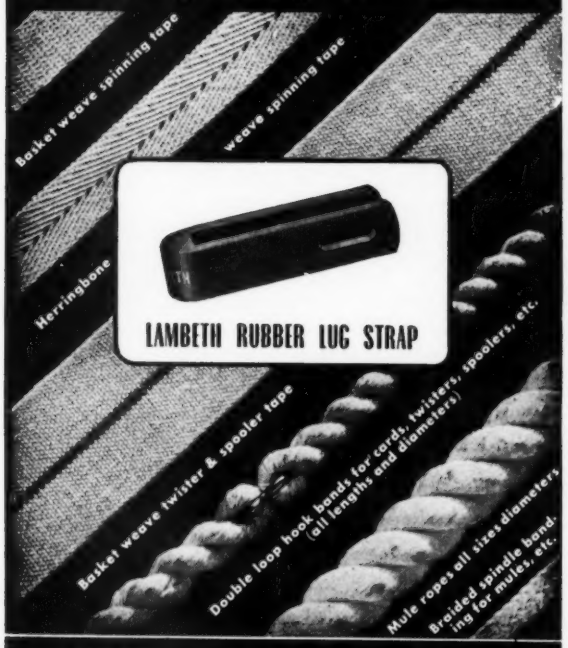
FOR SPINNING, TWISTING, SPOOLING, WEAVING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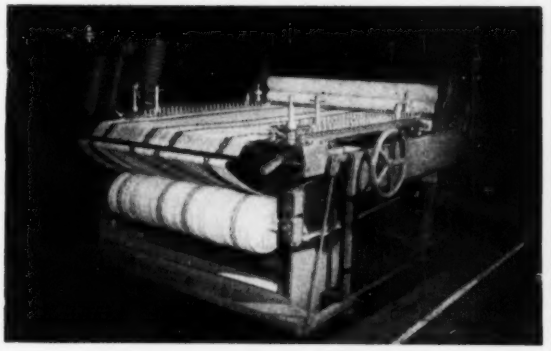

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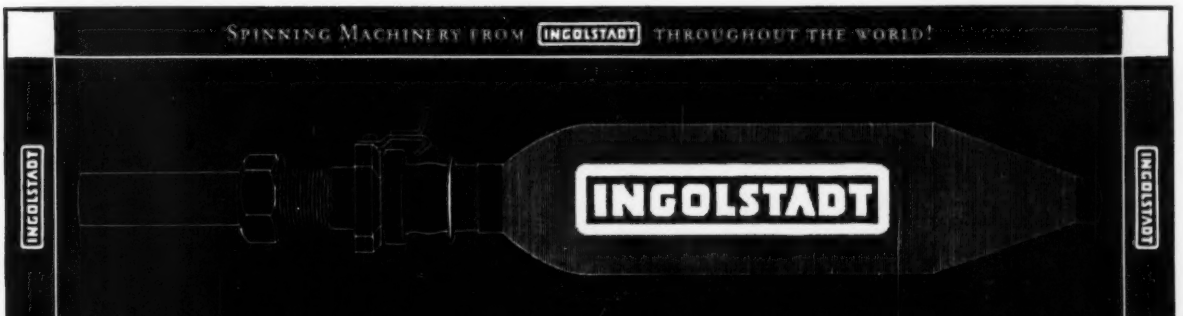

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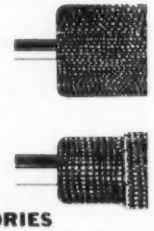

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Good Fire-Prevention Methods Depend on Employee's Attitude

Fire safety in industrial plants poses two distinct problems – and employee attitudes are important to the solution of both.

The first problem is caused by careless employees who discard sound fire-safety practices after the mill management does everything possible to protect its workers from fire.

The second problem involves the mill management that does little or nothing, beyond minimum practices required by law, to provide safeguards from fire.

Both conditions can be corrected only when employees become fully aware of the importance of fire safety to their jobs and their lives.

When employees have a clear understanding of the things involved in protecting themselves and their jobs, there is a general reduction in the carelessness that is responsible for a majority of plant fires. In addition, better business housekeeping results from the new interest.

The Fire Protection Institute, 670 Fifth Ave., New York 19, N. Y., has made a list of 20 questions for employees to ask themselves to increase employee interest in fire-safety problems.

1. Am I as careful about fire safety at work as I am at home?
2. Do I know where the nearest fire hose is located?
3. Do I know where the nearest fire-alarm box is located?
4. Do I know the location of the fire extinguisher nearest my working area?
5. Is there an adequate supply of underwriter-approved extinguishers for the lives and property involved?
6. Has anyone ever shown me how to choose and use the right extinguisher?
7. Do I know how to report a fire by telephone?
8. Are all fire exits kept clear at all times, and do I know where they are?
9. Has detailed fire-safety material showing me what to do in an emergency ever been given me?
10. If the clothing of a fellow employee caught fire, would I know what to do?
11. Have I ever been asked to participate in a fire drill?
12. Do I encourage my fellow employees to practice fire-safety principles?
13. Are no-smoking rules observed in all hazardous areas?
14. Is there an adequate supply of ash trays in smoking areas?
15. Are the flammable materials used where I work stored and handled safely?
16. Is the plant I work in inspected regularly for fire hazards?
17. In case of fire, has anyone been assigned responsibility for emergency measures?
18. Does my company publication occasionally carry material on fire safety?
19. Am I confident that my employer is doing everything that should be done to protect all employees from fire?
20. Can I get another job promptly if the place where I work is destroyed by fire?

After employees ask themselves these questions, they usually improve their fire-safety habits – and often become dissatisfied with inadequate protective equipment.

NEWS ABOUT *Men*

H. T. Amon has been appointed supervisor of special activities for the industrial relations department of Callaway Mills Co., LaGrange, Ga.

William Ralph Austin has been elected a vice president of Avondale Mills, Sylacauga, Ala. **Larcus B. Allen** has been promoted to assistant vice president.

Leroy W. Baines has resigned as superintendent of finishing at Arms Textile Mfg. Co., Manchester, N. H. **Ernest Noden** has resigned as overseer of French-system worsted-yarn making. **William T. Rigby,** former superintendent for Keasbey & Mattison, Meredith, N. H., will take charge of all finishing operations for the company.

J. L. Barnett, secretary-treasurer and general manager of Trenton Cotton Mills, Inc., Gastonia, N. C., has accepted a similar position with the Lineberger-Stowe chain of mills, Belmont, N. C. He succeeds the late DeLambert Stowe, who was secretary and treasurer of Perfection Spinning Co. and South Fork Mfg. Co.

Edward W. Blackwood, superintendent of the Adrian and Madora plants of American & Efird Mills, Mount Holly, N. C., has been named assistant general superintendent of the Efird Div., Albemarle, N. C.

Joseph Bono has been promoted to chief dyer of all operations for James Lees & Sons Co. in Glasgow, Va., and Bridgeport, Pa.

Raymond E. Bourey has been named overseer of carding at the Matson Mill, Inc., South Glastonbury, Conn.

MacMillan Boyd has been named vice president in charge of sales at Canadian Cottons, Ltd., Montreal, Que. **R. D. Gormley** has been named vice president in charge of finance for the company.

Clarence Burlingame, overseer of carding and drawing at Crown Mfg. Co., Pawtucket, R. I., recently retired. **Edward Bradford,** overseer of picking, is leaving Crown to accept a position with High Rock Mills, Philmont, N. Y. **Alfred E. Holden,** former overseer of spinning operations, has been promoted to general overseer of yarn manufacture at Crown's Pawtucket plant.

Albert Carpenter has joined Jerks Socks, Inc., as director of production.

Clair Cook has resigned as overseer of carding at the Stanley Woolen Co., Uxbridge, Mass. He has been succeeded by **Robert J. McGuirk.**

ROY E. BEAUREGARD (left) and STACY B. CARSON (right) have been appointed assistant superintendents of the finishing operations at the Schoolfield Plant of Dan River Mills, Inc., Danville, Va.

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News About **MEN** (Continued)

Guy G. Cromer, Anderson, S. C., has retired as chairman of Textron Southern, Inc.

W. F. Crowder has been named assistant manager of Clover Spinning Mills Co., Clover, S. C.

Philip Curtis has been appointed assistant superintendent at Pequot Mills, Salem, Mass. **Joseph Sharples** has resigned as superintendent.

Avery Davis, Jr., has been named overseer of dyeing at Rhode Island Plush Co., Woonsocket, R. I.

Marshall Dilling, Jr., has joined Howard Knit Products, Inc., Gastonia, N. C., as secretary and assistant treasurer.

Joseph T. Duffy has been named overseer of finishing at Peerless Woolen Mills, Rossville, Ga.

Stephen Dunton has been named manager of the purchasing and production-scheduling department of Chicopee Mills, Chicopee, Mass. He succeeds **R. V. Thomas**, who has resigned.

James M. Flack, vice president in charge of Northern manufacturing for Textron, Inc., Providence, R. I., has resigned to become vice president in charge of manufacturing for Indian Head Mills, Inc. Mr. Flack's duties at Textron will be assumed by **Harry H. Burton**, executive vice president.

J. E. Floyd, C. J. Black, and **Louis Murphy** have been named assistant overseers at Joanna Cotton Mills Co., Joanna, S. C.

Paul Foster, planning overseer of Mills Mill, No. 2 plant, Woodruff, S. C., has been promoted to assistant superintendent of Chesnee Mills, Chesnee, S. C. He has been succeeded at the Woodruff plant by **Walter Patton**, Spartanburg, S. C.

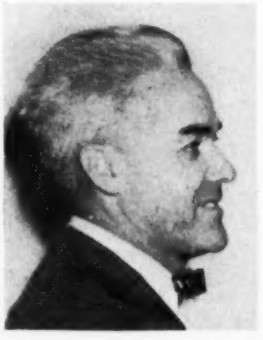
Kenneth R. Fox has joined the Fabric Research Laboratories, Inc., Boston, Mass., as vice president and a member of the board of directors.

Joseph E. Gastonguay has been appointed general superintendent in charge of manufacturing of Pepperell Mfg. Co., Lewiston Div., Lewiston, Me. **Francis P. O'Connell** is now director of employee relations in addition to his previous duties as purchasing agent, executive secretary to the manager, and head of the personnel and methods departments and the plant's clinic. **Timothy J. Murphy** is now office manager.

Alfred Greenfield has been named coordinator of development and manufacture of blended fabrics at Robbins Mills, New York, N. Y.

Oscar J. Guyer has been named superintendent of Almardon Mills, Inc., Lonsdale, R. I.

Garner Hallman has been named head of the statistical quality-control program for



J. CECIL BEITH has been named assistant manager of the weaving mill of A. & M. Karagheusian, Inc., Freehold, N. J.

FRED G. BARNET has been promoted to assistant manager of the Dallas, Tex., plant of Fulton Bag & Cotton Mills .

News About **MEN** (Continued)

American Thread Co., Clover, S. C.

Truman Hannan has been named overseer of dyeing at Botany Mills, Inc., Passaic, N. J., succeeding **R. J. Souter**, resigned.

Otto Hartmann has resigned as finisher at Glen Woolen Mills, Inc., Norwich, Conn.

G. Fred Hemus has been named superintendent of Holly Mills, Inc., and Guild-Northland Mills, Inc., Laconia, N. H. **Albert Riddell** has been named assistant superintendent.

G. W. Herrick has retired as secretary and treasurer of Aberfoyle Mfg. Co., Philadelphia, Pa.

E. H. Hines, Jr., has been named to the newly created position of general manager of the worsted mills of Deering, Milliken & Co., Inc., at McCormick, S. C., Johnston, S. C., and Pendleton, S. C.

E. H. Howell has retired as manager of Bemis Bro. Bag Co., St. Louis, Mo. **P. C. McGrath**, assistant manager, succeeds Mr. Howell.

Walter G. W. Josselyn has retired as assistant treasurer of Berkshire Woolen Co., Pittsfield, Mass. **Ralph G. Scheuffler**, assistant secretary, will succeed Mr. Josselyn, who will continue to serve on the board of directors.

Reginald Kent has been promoted to overseer in charge of finishing operations at the Franklin Mill of M. T. Stevens & Sons Co., Franklin, N. H. **Armand Marchand** has been promoted to assistant overseer in the finishing department. **Amedee Brassard** has been appointed assistant overseer in charge of dry finishing. **Fred E. Garland** has been named assistant overseer in charge of perching, winding, and wrapping of finished cloth. **George Sargent** will be in charge of grease mending, specking, and finish mending operations.

Gordon T. Klager has been appointed managing director of Dominion Woolens & Worsteds Ltd., Hespler, Ont. **Charles H. Barrett** has been named director of manufacturing, with headquarters in Hespler.

E. C. Klindworth has been elected vice president and assistant general manager at Jantzen Knitting Mills, Inc., Portland, Ore. **Mayer G. Monroe** was appointed vice president in charge of style development.

Fred Kloeckner has resigned as vice president of Susquehanna Mills, Inc., New York, N. Y.

R. A. Lambertson, secretary and treasurer of P. H. Hanes Knitting Co., Winston-Salem, N. C., has been named vice president and treasurer. Other changes are as follows: **W. Walker Cantrell** has been named vice president in charge of manufacturing; **Oscar A. Shortt** has been named vice president in charge of sales;

JAMES E. ROBINSON has been named president of the newly organized Indian Head Mills, Inc., New York, N. Y.

SAMUEL W. HUGHES has been appointed assistant manager of the Fiberglas division of Hess, Goldsmith & Co., New York, N. Y.

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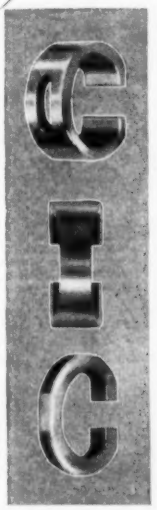

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News About **MEN**

(Continued)

Reginald F. Brooks has been named secretary and assistant treasurer.

Russell L. Lawson has resigned as executive vice president of Utica Knitting Co., Utica, N. Y.

Arthur C. McEwen has resigned as general manager of Packard Mills, Webster, Mass.

R. F. McHugh, former superintendent of the Steere Mill, Wanskuck Co., Providence, R. I., is now with Talbot Wool Combing Co., Norton, Mass., as assistant superintendent.

L. W. Merry has been named overseer of spinning for Swift River Woolen Co., Westerly, R. I.

A. L. Mills, Jr., has been elected president of Paola Cotton Mills, Statesville, N. C. **L. N. Mills** is secretary-treasurer and general manager.

William Mills has resigned as superintendent and manager of Normandie Mills, Nashua, N. H.

Joseph D. Moore, former president of Moore Textile Co., Charlotte, N. C., has been named manager of the Fieldcrest Towel Mill at Fieldale, Va. **Neill M. Dalrymple,** former manager of the towel mill, has been transferred to Spray, N. C.

Robert P. Moore has been elected president of Dacotah Cotton Mills, Lexington, N. C., succeeding his father, the late **John McD. Moore. John McD. Moore, Jr.,** has been elected executive vice president; **L. M. Grimes,** vice president; **Felix O. Gee,** secretary-treasurer.

Roger D. Newell has succeeded his uncle, **Carroll D. Newell,** as vice president of Cyril Johnson Woolen Co., Stafford Springs, Conn.

Paul Newman has returned to Villa Rica Hosiery Mill, Villa Rica, Ga., as superintendent of knitting. He succeeds Roy Mathews, who has resigned.

William Noble has resigned as overseer of finishing at William Park & Sons, Inc., Stafford, Conn. He has been succeeded by **Lewis V. Putney.**

ALEXANDER RITTMASTER has been elected a director of Gera Mills, Inc., Passaic, N. J.

T. G. Parker has joined Renfrew Woolen Mills, Renfrew, Ont., as dyer.

Mrs. Mary M. Peed, Creedmore, N. C., has been promoted to assistant treasurer and elected a director of Mount Hope Finishing Co., Inc., Butner, N. C. She succeeds **E. M. O'Connell,** who has resigned.

J. W. Quinn has been appointed general superintendent of manufacturing of Plants 1 and 2 of Rhyne-Houser Mfg. Co., Cherryville, N. C.

Melvin Rainville has been named overseer of finishing at A. D. Juilliard & Co., Atlantic Mills, Stottville, N. Y.

Robert Raniville has been appointed overseer of finishing at Lippitt Worsted Mills, a division of Crown Mfg. Co., Woonsocket, R. I.

Raymond J. Roy has been promoted to assistant overseer in the wet-finish department of M. T. Stevens & Co., Inc., Franklin, N. H.

Frank Rodzen, former overseer of carding at Hayward-Schuster Woolen Mills, Inc., East Douglas, Mass., has resigned. He has been succeeded by **Verne Violet.**

Henry Rollins has been appointed general manager of Slater Mfg. Co., a division of J. P. Stevens & Co., Inc., Slater, S. C. Mr. Rollins will continue with his duties as

News About **MEN** (Continued)

general manager of Cleveland Cloth Mills Div., Stanley Mills Div., and Ragan Spinning Co.

William C. Ross has been named general superintendent of Mascoma Mills, Lebanon, N. H., and Baltic Mills, Enfield, N. H., both divisions of American Woolen Co.

Norbert G. Schmidt has been appointed vice president in charge of manufacturing at Cluett, Peabody & Co. of Canada Ltd., Kotchener, Ont.

OBITUARY

Rudolph L. Bergman, general manager of Fulton Mills, Fulton, N. Y.

Eugene Blumenthal, secretary of Sidney Blumenthal & Co., Inc., New York, N. Y.

Charles Arthur Booth, 76, executive vice president of Buffalo Forge Co., Buffalo, N. Y.

Chester H. Briden, 73, retired president and manager of the Eureka Dyeing & Bleaching Co., Pawtucket, R. I.

Edward H. Cook, 82, former treasurer of the Quisset Mill, New Bedford, Mass.

Joseph Cryan, 61, president of Textile Thread Co., Watertown, Mass.

Marshall Dilling, Sr., 71, superintendent of A. M. Smyre Mfg. Co., Gastonia, N. C.

Theodore B. Drescher, 58, vice president of Bausch & Lomb Optical Co., Rochester, N. Y.

Karl G. Dresdner, 65, vice president and director of Princeton Worsted Mills, Trenton, N. J.

Edwin T. Fowler, 88, former president of Foster Machine Co., Westfield, Mass.

LeRoy L. Harding, 58, president of the Waterville Textile Mills, Inc., Waterville, N. Y.

Mrs. A. R. Hoover, Sr., president of Hoover Hosiery Co., Concord, N. C.

H. O. Jackson, 54, president of Great Falls Bleachery & Dye Works, Somersworth, N. H.

Henry Kaplan, 55, secretary-treasurer of Lusam Knitting Mills, Inc., Brooklyn, N. Y.

Robert Lassiter, 75, a director and former chairman of Mooresville Mills, Mooresville, N. C.

John Lowe, 88, former director and manager of Montreal Cottons Ltd., Valleyfield, Que.

Carl Mangum, 71, superintendent of the Birmingham, Ala., plant of Avondale Mills.

Harold F. Mills, 75, retired general superintendent of Dominion Textile Co. Ltd., Montreal, Que.

James I. Nuttall, former overseer of Continental Mills, Auburn, Me.

Edwin F. O'Brien, secretary and treasurer of Commonwealth Color & Chemical Co., New York, N. Y.

Charles L. Peirce, treasurer of Jordan Mills, Inc., Columbus, Ga.

Alfred K. Reed, 45, chairman of Ripon Knitting Works, Ripon, Wis.

William P. Smedley, assistant vice president of Duplan Corp., New York, N. Y.

John E. Spenlinhauer, Sr., retired foreman for American Thread Co., Holyoke, Mass.

William B. Wood, 67, a director of York Knitting Mills, Ltd., Toronto, Ont.

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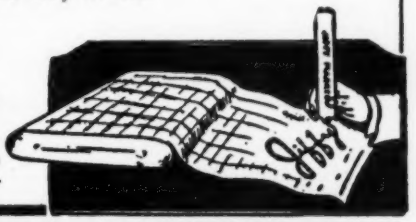

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WANTED
DESIGN ENGINEER

Prominent New England Paper and Textile Finishing Machinery Manufacturer desires First Class Design Engineer. Real Opportunity. Permanent position. Write giving full particulars and salary requirements.

P-7138, Textile World
330 W. 42 St., New York 36, N. Y.

WANTED
TEXTILE MILL SUPERINTENDENT

An expanding textile mill in Montreal, Canada, needs a mill man with a sound knowledge of efficient textile mill operations, experienced in either weaving or knitting. Mechanical background essential.

This position offers an interesting opportunity to advance with a growing organization. Salary and bonus.

Please write giving full details of your experience and education to

P-6997, Textile World
330 W. 42 St., New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

LARGE MANUFACTURER of synthetic fibers and dyestuffs in the South desires a young college graduate with 2-5 years laboratory or plant experience in the dyeing of synthetics to work as a chemist in service laboratory. P-6847, Textile World.

WANTED—EXPERIENCED man to supervise setting up Finishing Range for Toy Plush. Substantial fee to right man. P-7246, Textile World.

WANTED—MAN who knows woolen manufacturing from raw stock to finished product; capable of correcting construction and improving production. Position: Assistant to Manager in Canadian Mill. Opportunity for advancement. P-7278, Textile World.

SELLING OPPORTUNITY OFFERED

WANTED: SUCCESSFUL Mfgr's Agents to add textile-finishing machinery. Commission basis. SW-6704, Textile World.

POSITIONS WANTED

OVERSEER OF weaving available, now employed—Excellent quality and efficiency record. Experience includes both Draper & C&K looms & all synthetic fibers. Capable training own help. Hygrade man. Best of references from employers as well as Textile School. PW-6952, Textile World.

RAYON NYLON Throwster. Thoroughly experienced in production and supervision. Modern and practical methods in all phases of throwing. Capable establishing throwing units and training own help in all throwing departments. Married. References. Employed. PW-6556, Textile World.

POSITION WANTED, by textile photo-engraver with 20 years experience on all up-to-date methods of photoengraving-processing of cylinders. PW-7135, Textile World.

TEXTILE CHEMIST. B.S. Experienced Dyeing, finishing supervision; development. Mfg. Auxiliaries. Quality Control. Customer liaison. Executive calibre. PW-7171, Textile World.

RECENT P.T.I. graduate desires position leading towards technical sales liaison world or trouble shooting. Experienced in standardizing, dyestuffs and sales. PW-7249, Textile World.

YOUNG MAN 26 married 4½ yrs. Converting experience for top synthetic fabric weaving mill some tricot work, seeks oppty, with progressive organ. N. Y. or N. J. area. PW-7265, Textile World.

POSITIONS WANTED

KNITTER MECHANIC over 30 years experience on Tompkins Machines Specialty Worsted Jersey and all sizes and types of Terry Cloths desires permanent position. Have also worked on and set Rib Machines Brinton and Supreme Jersey Wheel Machines. Will travel and relocate if necessary. PW-7320, Textile World.

ASSISTANT TO harrassed Mill Executive. Unafraid of responsibility and hard work. Over 30, married, two children. B.S. in Business Administration; fourth year in Textile School. Know Cost Accounting and Time Study Methods. 4½ years experience in novelty yarn manufacture. Organized and maintained Quality, Production and Inventory Control Programs. PW-7324, Textile World.

TEXTILE TECHNICIAN—Salesman available. Vast experience industrial and span synthetic dress fabrics. PTI grad. PW-7370, Textile World.

(Continued on page 332)

AVAILABLE FOR CONSULTING WORK

Textile wet-processing, (dyeing & finishing) for short or long-term engagements within or outside USA.

PW-6560, Textile World
330 W. 42 St., New York 36, N. Y.

Available
WORSTED SPINNER

EXPERT IN SYNTHETICS, PACIF. CONVERT., PIN DRAFTERS, SUCCESSFUL SUPERINTENDENT-MANAGER.

PW-7267, Textile World
330 W. 42 St., New York 36, N. Y.

PROFESSIONAL SERVICES

EATON & BELL
Patent Attorneys
904 Johnston Bldg., Charlotte, N. C.
1149 Munsey Bldg., Washington, D. C.

Additional Employment & Business Opportunity Advertising on page 332

USED EQUIPMENT—Available Immediately

NOW IN OPERATION

ITEM SL-SC

SILK LOOMS—163 C & K S-3 & SUPER

52" B.S. with 20 HARNESS DOBBIES

FULLY AUTOMATIC

2 x 1 SHUTTLE CHANGING

6 BANK ELECTRIC WARP STOP MOTION

MOTORIZED

USED EQUIPMENT – AVAILABLE IMMEDIATELY

SPINNING

GESSNER TEASEL GIG and BRUSH RANGE — Item GTG-B
New 1948—Used 3 months
68" Working Width

WINDING

SACO LOWELL COTTON SLASHER — Item SLCS-E
Complete with auxiliary equipment
Including Model D High Speed Warper
Regular Width—Beam Type

2 YARN WARP COILERS — Item 12166
Ceiling Type

WHITTIN QUILLER—MODEL J — Item L-WQ
304 Spindle
3½" Gauge—10½" Traverse

FINISHING

HUNTER CARBONIZING TANK—NEW — Item HCT-J
Lead-lined Cypress Tank
Fittings acid resisting metal
Nip rolls rubber covered
90" wide—Never used

CURTIS & MARBLE STEAM PRESS — Item 12290
66" Working Width
Chain Drive but Without Motor

DRY TIGER — Item 13214
3 Cylinder. Complete with cylinders and fancies, motors and starting equipment for cylinder and exhaust hoods.

MISCELLANEOUS

1—4 ROLL MANGLE—BUTTERWORTH — Item 12582
For Dye Machines
66" Working Width
Rubber Rolls

12—INFRA RED LAMPS — Item 12905
Battery arranged in one trough
12 lights wide—375 Watt—115 Volts

24—INFRA RED LAMPS — Item 12130
Battery arranged
4 lights x 6 lights
Brass Reflectors
500 Watt—115 Volts

30,000—W-3 AUTOMATIC FILLING BOBBINS — Item 13584
8" O.A.—7" Barrel

390 RED FIBRE CASES — Item 12610
35" long x 17" wide x 32" high
These cases are well constructed with 4 runners on the bottom and inside metal handles at the top. All corners and top are reinforced metal with 1¼" strap iron.

COLLINS & AIKMAN CORP.

SALES & SALVAGE DIVISION

5th and Upland Avenue — PHONE CHESTER 3-4167 — Upland, Delaware Co., Pa.

LIQUIDATION SALE

TEXTRON FINISHING PLANT—MANCHESTER, N. H.

1—Rodney Hunt Stainless Steel Tensitrol Washer 72", 1950
2—V. V. G. L. Scouring & Boil-off Washers, 1948
1—V. V. Stainless Steel Drum Setter & Boil-off 72", 1948
1—Enclosed Stainless Steel 14' Dye Box, 34-string, 1951
1—V. V. Pneu. Embossing Calender 54", Treebark, 1951
1—V. V. Decatizer 45", L4 pump and blanket, 1947
2—Measuregraph Inspection Machines 45" wide
1—Hermas Inspection Machine 66" wide

AUCTION SALE April 21, 1953

OPAL PROCESSING CO.—HALEDON, N. J.

5—Rice, Barton & Fales Print Machines; 10 colors 58", 8 colors 58", 8 colors 50", 6 colors 45", 4 colors 46".
1—Stainless Steel Rope Washer, 54' x 14', 58 sect., 1948
1—Morrison Jacketed Palmer 64 x 60", quetch, 1945
3—V. V. Tenter Frames 40' long x 60" wide, 50' long x 60" wide, & 60' long x 54" wide.
1—Rice, Barton & Fales Hydraulic Mandrel Jack
2—Textile Vat Agers 30' x 50", brass rollers
1—Greige Washer 15' long x 68", 3 compts.
1—Nat'L Loop Dryer 45' long x 89" stick
23—Copper Dry Cans 60" wide x 23" dia.
1—V. V. Decatizer 45", L4 pump & blanket

SPECIAL LISTING

445—Copper Rollers, 60" wide, X-bore, 15"-17" circ.
1—Textile Friction Calendar, 3 rolls, 54", 100 ton pressure.

Telephone #Cortlandt 7-1591

REPUBLIC TEXTILE EQUIPMENT CO.
40 WORTH STREET NEW YORK CITY
REFINANCING · APPRAISALS · PURCHASE · SALE · LIQUIDATION OF MILL PROPERTIES

SOMEWHERE SOMEONE
In the South Wants to Meet Us

WHY?

Because we have new, modern cards—drawing—roving—spinning—twisting and winding machinery to spin 60,000 pounds of cotton yarn per month. We desire a partnership with some small mill or individual, experienced in manufacturing yarns. We can use all or 50% of yarn produced. Must be in good labor market and able to meet competition.

What have you got to offer?

BO-7280, Textile World, 330 W. 42nd St., New York 36, N. Y.

BRITISH HOSIERY MANUFACTURER

WANTS TO PURCHASE

A number of 51 or 60 gauge READING or LIEBERKNECHT Full Fashioned Hose Machines which have not been in operation more than 3 years.

Send full machine details as soon as possible to

W-7307, Textile World
330 W. 42 St., New York 36, N. Y.

POSITIONS WANTED
(Continued from page 330)

SWISS, 31, ENGLISH speaking, designer for shaft-woven fabrics seeks position in U. S. A. preferably in silk ribbon mill. Also full commercial experience. Excellent references. PW-7367, Textile World.

TEXTILE OVERSEAS graduate age 40, wants position spinning weaving as laboratory or mill assistant willing relocate. PW-7018, Textile World.

HEAD, KNITTING Dept., leading Southern Textile School, desires supervisory or administrative position in industry. Young capable, alert, practical, initiative. PW-7145, Textile World.

AVAILABLE, SUPT. or Assist.-Supt. of Cotton Mill, Specialized in Weaving. Good general knowledge of all departments, also production and quality control. Good producer, over twenty-four years experience, I.C.S. course, University training in Business Management and Industrial Organization. Best of references. Reply to PW-6664, Textile World.

CONTRACT WORK WANTED

Silk throwing exclusively!
Quality minded mill has some capacity open for fast deliveries. Moderate prices. May we quote? Box 8785, 217 7 Ave., N. Y.

MANUFACTURERS AGENT
AVAILABLE FOR CAROLINAS

Many years' experience in yarn manufacture including spinning, twisting and winding. 15 years' sales experience to the textile trade in North and South Carolina. References furnished. Write

RA-7130, Textile World
330 W. 42 Street, New York 36, N. Y.

TEXTILE LINE
WANTED

West coast factory agency calling on dept. stores—jobbers and manufacturers wishes strong line for west coast states on commission basis—in answering—give full information on line

OVERMAN & ASSOCIATES
4452 FINLEY AVE.
LOS ANGELES (27), CALIF.

TRICOT MANUFACTURERS

HAVE YOU DIFFICULTY ANALYZING YOUR PATTERNS?
Just send them to
THOMAS BALLAN
214 East 168th Street, Bronx, N. Y.
You will get a detailed description concerning construction and yarn for a reasonable fee.

WILL BUY INTEREST
in
Small Southern Cotton Mill

We use 20,000 pounds yarn monthly for weaving.

BO-7262, TEXTILE WORLD
330 W. 42nd Street, New York, 36, N. Y.

WANTED TO BUY
RAYON & NYLON YARN
THROWING PLANT
UP TO DATE MACHINERY
AT LEAST 1000 LBS.
PRODUCTION PER DAY
BOX 579 REALSERVICE 110 W. 34th N. Y. C.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

Additional Wanted Advertising on the opposite page

Textile machinery for IMMEDIATE production. We are exclusive agents!

Weaving - Throwing - Narrow Fabrics

machinery sold as INDIVIDUAL ITEMS!

SOME MACHINERY BRAND NEW!

2 MONEY-SAVING PLANT LIQUIDATIONS

1—Johnson—7 can 52" Slasher
With Brown indiv. can control panel board.

12—Fletcher Narrow Fabric Looms
Standard 15'8". Broad beams, motorized.

48—1949-50 C&K S-6 Looms
Complete with all supplies . . . beams, heddles etc.

42—Atwood Unirail D.D. Twisters
Brand new . . . never used! 1 lb. pkge.

60—Spindles—Whitin Schweiter
1948-49. Auto. quilling. Take 10 1/8" bobbins.

72—44" Draper XK Looms
Motorized, automatic. Comp. with beams, heddles etc.

7—Atwood 10B Doubler Twisters
1948. 100 spindles each. 6" spacing.

2—1951 Sipp Eastwood Warpers
High Speed
1—101" horizontal. 1—direct for 52¼" beams.

96—56" C&K S-3 Looms
Motorized. Comp. with all equipment.

9—Atwood Utility Twisters
240 spindles each. Individually motorized.

2—Magazine Cone Creels
High speed. 4 lb. 800 and 860 ends.

72—64" Draper XD Looms
1948. Automatic. Motorized.

1—Foster Sizing Machine
Model 76. 25 spindles. Motorized.

50—Universal #50 Coners
6 spindles each. Motorized. 3-30 gear gain.

24—72" C&K S-6 Looms
Motorized. Automatic.

All items subject to prior sale.

WRITE—PHONE—OR WIRE, TODAY!

Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

WANTED

TEXTILE MACHINERY

including Carding Machines, Spinners, Automatic Looms, Slashers, S/S Dyers, Extractors, Calenders, Clip & Pin Tenters, Dry Cans, Multi-color Presses.

Will consider operating or idle plant.

P. O. Box 1351
Church Street Sta., New York 8, N. Y.

WANTED

RUBBER COVERED ROLL

Which can be turned down to dimensions as follows: Diameter 5¾" to 7". Length of roll surface 45". Shaft extension 12" minimum each end and 15/16" minimum diameter length over all minimum 69". Write stating location and price.

W 7327 Textile World
330 W. 42 St. New York 36, N. Y.

LIQUIDATING—For Immediate Removal

PARTIAL LISTING

2—Pin Tenter Frames, 80' x 62", Elect. Guiders, Motors.
1—Tenter Frame, 90' x 60", Stainless Clips, Motor.
1—Semi-Decator 50", Pump and Motors, Blanket.
1—Palmer 65" x 60" Cylinder, Blanket Cyl., Motor.
6—Sets Squeeze Rolls, 2—96" Rubber Rolls, Anti-Friction Bearings.
1—Calender, 3—60" Rolls, Ball Bearing, 2 Paper and 1 Steel Roll.

WE WELCOME YOUR INQUIRIES

INDUSTRIAL PRODUCTS OF AMERICA

140 Market Street Paterson, New Jersey
Telephone SH. 2-6614-5-6 IPA Cables: Texindus

WANTED

Set of 15 to 20 stainless steel Dry Cans 70" to 72" wide. Prefer late type. 220 V —3 phase.

6—50" stainless steel dye Jiggs individual motor driven.

Give full description, condition, price, make and age.

NATIONAL DYE WORKS
1643 W Fullerton Ave. Chicago, Illinois

DEPENDABLE ECONOMY

1—Butterworth 90' Clip Tenter, to 190".
1—C & M 60" Wax Brushing Machine.
6—V.V. 60" Tensionless Dye Jiggs.
1—Troy 48" Extractor, Stainless Steel
1—Smith-Drum S.S. 7-arm Skein Dyer.
1—Perkins 50" Hydraulic Calender.
1—Butterworth 66" Scouring Machine.
1—P & W Uxbridge 72" Inspection Machine.

We Carry a full line of Chemical and Process Equipment

OUR 36th YEAR

CONSOLIDATED PRODUCTS CO. INC.

13-16 PARK ROW N.Y. 38 N.Y. BArclay 7-0600

LIQUIDATION SALE

MODERN PRINTING & FINISHING MACHINERY

2—50", 8 color, Rice, Barton & Fales Printing Machines.
1—46", 8 color, Rice, Barton & Fales Printing Machine.
1—50", 10 color, Rice, Barton & Fales Printing Machine.
1—64", 4 color, Textile Printing Machine.
1—50", Van Vlaanderen 3 roll Padding Machine, with 8—50" Drying Cans.
2—60", 18' Cast Iron Vat Agers.
2—54", 18' Cast Iron Vat Agers.
1—76" Polishing Lathe.
1—100 Gal. Steam Jacketed Mixing Kettle.
4—1½ H.P. Gearhead Motor Mixers.
1—40'x80" Van Vlaanderen Tenter Frame.
1—48", Haring & Stevens Self-balancing Extractor.
1—54", Scutcher, with L-4 Nash Pump & Motor.
1—60'x60", Van Vlaanderen Tenter Frame.
1—40'x60", Morrison Machine Co. Tenter Frame.
1—64" Van Vlaanderen Palmer.
1—50" Van Vlaanderen 2 roll Quetch.
1—54" Van Vlaanderen Decating Machine, with L-4 Nash Pump & Motor.
1—60" Van Vlaanderen 3 roll Calender, 2 paper & 1 steel.
2—75 H. P. Reliance A.C.D.C. Generator Set.
1—Standard Print Washer.
1—8'x8'x30' long Cottage Steamer.
1—National Dry Box, 9 fan, 40' long, 86" Revolving Sticks.

1,000 COPPER ROLLERS

SHerwood 2-7666 SHerwood 2-7667
DOMESTIC Moe Blank EXPORT
TEXTILE DYEING & FINISHING MACHINERY MACHINERY
523-525 E. 18th ST. PATERSON 4, N. J.

UNIVERSAL #50 WINDERS

REBUILT GUARANTEED

Coners, tubers, pineapple coners built to your specifications.

ALSO

64—1 H.P. A.C. Motors 3/60/440—1200 R.P.M.
2—Sargeant Ballers—11" Gauge
8—Fidelity Reels
6—S.S. Dye Tubs Rodney Hunt, 6'6"
2—P&W 2 and 3 Blade Davidson Shears
3—Pin Tenter Dryers

GAINES TEXTILE MACHINERY CO., INC.
141 West 17th St. New York 11, N. Y.

INTERSTATE
TEXTILE EQUIPMENT COMPANY, INC.

OFFERS . . .

14 Universal #50 Coners, pineapple, wire baler, good shape.

1 Hercules 48" Extractor stainless basket, late style, 3/60/220 V. motor driven.

1 Smith Drum, 3 spindle CSD Skein Dyer (Monel)

• INTERSTATE TEXTILE
Equipment Company Incorporated

508 W. Fifth St. Charlotte 1, North Carolina
Phone 3-1894 Cable-Intertex

Power-Plant Maintenance

(*Continued from page 264*)

tools are and how to use them.
6. They are available immediately.

In our plant, we have a crew of four general mechanics who do all types of mechanical work except electrical work, instrument repair, and welding. We also have available a central-shop crew that is used on all plant-maintenance work. This crew consists of special-skill men such as millwrights, pipers, insulators, machinists, sheet-metal workers, electricians, etc.

How Big Should Your Crew Be?

Our particular problem is to decide how large our power-plant crew should be and how much of our work they should do.

Some of the reasons that make the selection of the right-size power-plant crew difficult and important are:

1. A large percentage of repair cost is usually labor cost.
2. The work is sometimes dirty and heavy and sometimes fine and exacting.
3. The division of work that must be made between central-shop and power-plant crews presents morale problems for both crews.
4. During overhauls of certain critical equipment, we may have a strict time schedule to meet and our manpower requirements are large. Between these overhauls, our needs are not so great.

With these thoughts in mind, I believe we should decide on the size of the power-plant crew in the following manner:

The power-plant crew should do almost all the minor planned-maintenance work and almost all the minor repair work that comes up from day to day. The crew should also be large enough to take care of most emergency work and breakdowns of a minor nature.

On scheduled major-repair jobs, this crew should be only a nucleus. It should be supplemented by central-shop labor. In practice, on boiler overhauls, I have used central-shop labor to help in cleaning and heavy work and to check and clean bearings. We also generally use operating personnel and firemen and assistants on overtime to augment this crew.

Overtime Work Is Justified

We believe that this overtime work is justified because these men are also more efficient than central-shop men because of their familiarity with the equipment and interest in seeing a

(*Continued on page 336*)

FOR SALE

PARTIAL LIST
IMMEDIATE DELIVERY

2—Davis & Furber Iron 3 Cylinder Wool CARDS, 48" x 60" dia. Cylinders, with Bramwell Feeders, #17 Metallic Breasts, 8 workers, 7" dia and 6 Strippers 2¾" dia. on Breaker and Finisher Cylinders, with 7 Workers and 7 Strippers on Finisher Cylinder, Doffers 36" dia., Whitin Broad Band Center Draw Feeds with F1 Conveyors installed in 1945, Tape Condensers, 4 bank, single rubb, 120 ends, with Waste End Blowers. Motors 220 volt, V Belt Drive, Card Clothing #34-35-36.

1—Parks & Woolson REBUILT CLOTH DOUBLING, WINDING AND MEASURING Machine, Serial #8525, 76" wide on open roll, 37½" folds, V Belt Motor Drive.

1—Sargent Type, all metal 10' CONE DUSTER, with hinged metal cover, cylinder having 293 pins, ⅛" x ⅛" dia. x 2" long, V Belt Motor Drive 550 volt.

1—Tolhurst REBUILT, Open Top Hydro EXTRACTOR, 48" dia. copper basket, 3 point suspension type, safety cover, timer, push button station with vertical side mounted motor 220/440 volt, V belt underneath drive.

1—Elliott & Hall REBUILT Cloth FOLDER, 55" on the jaws, one yard fold, equipped with Air Lift Mechanism and Silent Chain Drive with 220/440 Volt A. C. Motor.

1—Curtis & Marble REBUILT INSPECTING MACHINE, 96" width, inclined table, yardage counter, forward and reverse treadles with Servis Recorder (for more than one shift), gear driven with 220 volt A. C. Motor and supplied with detachable overhead chain driven Folder.

48—Curtis & Marble Veri-Best LOOMS (WI), 82", automatic, ball bearing crank and bottom shaft, 25 harness heavy head motions, with 15 T Cylinder Gear, Center Filling Fork, Friction Letoff, #23 Feeler, 4 Bank Electric Warp Stopmotions, 2 x 1 Gearing, Felt covered Pressure Takeup Rill, Hopper for 44—8¾" Bobbins, using Shuttle 17½" x 1⅞" x 1⅝". Temples, minimum of 12 Bars of Box and Harness Chain, 30" Beam Flanges, 1 H.P. 550 volt Motors, with Switches.

12—Crompton & Knowles W3 Automatic Looms, 82", 1946 Model, 26 Harness Heavy Head Motions, 4 x 1 box, All Purpose High Roll Worm Takeup, with two Felt covered Pressure Rolls, Automatic Letoffs, Center Filling Stopmotion, Shuttles 18" x 1⅝" x 1⅜", accommodating an 8¾" Bobbin, Beam Flanges 24" dia., motorized with 1½ H.P. 220/440 Volt Motors and Switches.

6—Crompton & Knowles Automatic Looms, W3, 82", Convertible Type with 4 x 4 attachments, 1944 Model (same description as the 12 W3 Looms above).

1—Davis & Furber REBUILT KNIT GOODS NAPPER, self-oiling cylinder, 80", with 20 gear driven Working Rolls, Folder Takeoff, with good useable Card Clothing, Belt Driven.

1—Gessner REBUILT Double Acting 78" NAPPER, equipped with 18 gear driven Working Rolls, chain driven, Expander Roll, Folder takeoff with Expander Pulleys for varying speed of working rollers, with Double Push Button Stations on either side of machine. Motor driven with 550 volt A. C. Motor, with good useable card clothing.

2—Woonsocket REBUILT Single Acting NAPPERS, B. B. Units, 1938 Model, equipped with 20 Working Rolls on each cylinder, driven by Single V Belt Energy Adjustment, 5 step Pulley Carrier Roll, Speed Change, Scrimp Bars. Units hooked in tandem and equipped with a Folder and driven with a 15 H.P. 550 volt Gear Motor. Card Clothing in excellent condition.

1—Proctor & Schwartz REBUILT, Iron Construction OPENER OR WASTE PULLER, pin lagged cylinder 48" x 48", Ball Bearing Mounted with three pairs of Workers and Strippers, 26" dia. Doffer. Rolls roller chain driven. Machine equipped with feed apron, feed rolls and delivery rolls. Steel cover over cylinder, V Belt Drive.

1—Davis & Furber REBUILT Iron Fearnaught PICKER, with wood slatted Feed Apron, two Cockspur Feed Rolls, Cylinder 48" x 48" with Cockspur Teeth, 4 Strippers, 3 Workers, and 20" Dia. Doffer, Tight and Loose Pulley, Belt Drive.

1—Voelker REBUILT CLOTH PRESS, Cylinder 66" x 16" Dia., reknurled and filed, Double Bed with Brass Shields, Face and Back Brush, Steam Connections with Rolling Up Head and Folder Takeoff, V Belt Motor Drive with 220 volt A. C. Motor.

1—Mawaco 72 SQUEEZE SET, 1950 Model, lever set, can exert approximately 5 to 6 ton pressure, two rubber rolls, like NEW, 72" face x 9" dia. Rolls mounted in bronze bush bearing blocks with copper steaming unit at leton end, followed by a stainless steel impregnating tank 76" long x 14" wide x 23" deep, with stainless steel immersion roll, followed by another stainless steel impregnating tank 76" x 22" wide x 23" deep, with stainless steel immersion roll. Steam, water and drain connections included. Machine equipped with a number of stainless steel and brass roller bearing guide rollers and a brass ball bearing roll 76" face x 5" dia. on the takeoff.

McDOWELL ASSOCIATES, Inc.
2568 Park Avenue — Bronx 51, New York
Tel.: MElrose 5-6741

For Sale
56 24 Carrier
N.E. Butt Braiders

#2—First class Condition. These were used for making round shoelace braid.

FS-7017, Textile World
330 W. 42 St., New York 36, N. Y.

Vertical Can Dryer Unit

18 45 inch cans, bucket type, good running condition; also Padder unit with solvent resistant rubber rolls, plus 2 Reeves units, motor, batcher, and misc. drives.

FS-7098, Textile World
330 W. 42 St., New York 36, N. Y.

PRICED FOR QUICK SALE

44 New Marathon Electric Motors,

1 H.P., 550 V., 3 ϕ, 60 CY., 1200 RPM, ball bearing totally enclosed. 23 of the motors with rigid mount double shaft; 21 with rigid mount single shaft.

Contact: R. C. BERRY
Honan-Crane Corp.
Lebanon, Ind.

BIALEK'S BEST BUYS

WHITIN AUTO QUILLERS 1947-48;
ABBOTT AUTO QUILLERS
COCKER WARPER, CREEL
TERRELL STRIPPER
DRAPER MOD "D" FULLY EQUIPPED FOR DUCK

S-3, 56", 2x1 AUTO SHUTTLE CHANGE
C&K, 54", 2x1 AUTO BOBBIN CHANGE
44" XK, DOBBY AND CAM
JOHNSON SLASHERS
C&K, W-1, 4x1 AUTO 48"

THEODORE BIALEK & CO.

6704 EMPIRE STATE BLDG.
NEW YORK CITY
LONGACRE 3-4978

396 STRAIGHT ST.
PATERSON, N. J.
LAMBERT 3-5886

FOR SALE
MACHINERY and EQUIPMENT
of
ONEIDA BLEACHERY
NEW YORK MILLS, (NEAR UTICA) NEW YORK
WRITE FOR DESCRIPTIVE CATALOG

James E. Fitzgerald — 10 PURCHASE ST., FALL RIVER, MASS.
Telephone 8-5616
SPECIALIZING IN BLEACHING, DYEING AND FINISHING MACHINERY SINCE 1920

S&K Where your $$$$ buy MORE

18 W-3 CONVERTIBLE C & K 82" LOOMS
16 W-2 C & K 82" 4 x 1 AUTO. LOOMS

1 3 Color-60" Print Machine
1 60" Paterson Tuber
3 Hercules 48"-60" Extractor
300 Auto Drapers 43" to 76" cloth
16 C & K Auto Bob Changers 2 x 1—72" R.S.
140 S-3 C & K 52" R.S. shuttle changers
12 C & K 4 x 4—54" R.S.
40 C & K Woolen looms 72" to 110" R.S.
1000 Electro Rods 66" to 133"
1 V.V. 40'-60" Tenter Frame, Enclosed Gears
1 V.V. 60'-66" Palmer Tenter Unit, Complete
1 36" Self Balancing Extractor
1 W&J Tenter Frame 90" W 30' L
1 W&J Tenter Frame 54" W 30' L
1 2 Roll 60" Quetch-V.V.
1 Set of 8—68" Copper Cans
1 New 80½ Beamer
1 60" wide Pin Tenter Frame 60'-W. & J.
1 Paterson Examiner, 72" wide
1 72" Park Woolson Decater
1 Set 10 Dry Cans 48" face
6 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
1 72" Werner Padder Micro Set
4 Three (3) Roll Padders 45"
30 50" Dry Cans
4 Johnson Slashers—7—5—3 Can 66"
2 90" S.S. Jiggs
4 50" S.S. Jiggs
1 72" Greige Washer with Squeeze Rolls 24' long
5 Atwood 5B Twisters
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4 Oswald-Grundy 46—Spindle Cop Winders
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1—Kenyon 72", 10 pass Cloth Dryer
1—Gessner Mod. 20 Press, 1950
1—Gessner 72" x 36" Decater, 1943
1—P. & S. Truck Skein Dryer, 1939
1—Set (6) Copper Dry Cans, 70" x 36"
1—Wetting-Out-Tank, S/S Lined, 62"
1—P. & W. 72" Steam Luster Machine
1—Crab, 3 bowl, 72", Yorkshire Type
2—Birch Doub. & Tack. Mach., 92"
2—Teasel Gigs, Doub. Cyl., 60"
1—P. & W. 4 cyl. Brush, 66"
1—P. & W. Cloth Doubler, 66"

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4—Macbeth Color Matching Lamps
1—Singer Overlocker

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(Continued from page 334)

good job done quickly. Also, it gives them experience.

In addition to using central-shop crews to augment the power-plant force on major overhauls, we generally use them to accomplish complete minor overhauls when the work has piled up for the power-plant crew and the particular job in question is more or less standard, such as replacing conveyor parts or changing some piping. We also use them on crafts requiring special skills, such as instrument work, electrical work, welding, and some rigging.

By regulating the size of our maintenance crew, we manage to do most of the work that has to be done; and when we get caught up, we even sometimes get a chance to do some of the work that "it would be nice" to have done.

One quick test that we can put on the size of the crew is this: As long as we keep hearing warnings from the men that we had better do something pretty quick about this or that piece of machinery, we're pretty sure the crew isn't too large.

These Problems Give Trouble

A good lubrication program is generally the first step in any planned-maintenance program. Several plants I have known have had particular problems with greased bearings.

1. Sleeve bearings on outside conveying equipment particularly enjoy good lubrication. For this service, if a complete automatic greasing installation cannot be justified, many people have found that grease cups, brought out to central locations with tubing from the bearings, are very effective.

Actually, grease fittings on the bearings would be just as good, if we could be sure that the man doing the greasing would get around to all of them frequently enough. We cannot be sure that he will give all the grease cups a quarter of a turn twice a shift either; but if we put several cups in one location and spot that location in his normal path somewhere, he's a lot more likely to turn them.

Also, many people have found that drilling and tapping a cover of the grease cups and inserting grease fittings in these holes makes filling much easier and cleaner, since it can be done with a regular gun on a regular schedule.

2. Another lubrication job that gives trouble is the greasing of electric motors and other ball and roller bearings. I believe that the only way to solve the problems of overgreasing and using the wrong lubricants is to put all of this work under the direct charge

(Continued on page 338)

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1—V. V. Decatizer
2—Tenter Frames, 40'-30', S. S. Clips
1—V. V. 3-roll Calender, 50"
3—Beamers 76"-55"-50"
2—Copper Jacketed Mixers, 200 gal. and 75 gal.
2—Tubers 50"
1—50" Inspection Machine
2—Merrow Sewing Machines
2—Metropolitan Sewing Machines
3—Extractors, 2—60", 1—48"
1—V. V. 50" Scutcher
1—MacBeth Color Matching Lamp, new 1950
3—76" all S. S. Jiggs
2—60" S. S. Lined Jiggs
1—V. V. 64" Palmer & Quetch
6—Textile Squeeze Sets, 96" long, 2—rubber rolls 19" and 12" dia., roller bearings
1—Set 8 Copper Dry Cans 84"
1—Set 9—72" Copper Dry Cans
1—Set 6 Copper Dry Cans 50" x 30" dia.
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1—Proctor & Schwartz—modern—main cyl. 32" D x 60" L
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6—Balling Machines, Lloyd type—make 5# balls of hv. twines or cords—belt drive. Location: Plymouth.

2—Shearing Machines—Curtis & Marble—arranged for shearing sisal twines—20 ends @ 120 ft./Min.—rotary brushes & shearing cyls.—extra shearing cyls. available. Also 20-spd. takeup frame for 8" x 10" spools. All belt drive. Location: Plymouth.

4—2-Spd. Horiz. Haskell-Dawes 8" x 10" Geared Former and Twisters—for belt drive—condition excellent. Location: Plymouth, Mass., and Virginia.

2—6-Flyer 5" x 10" Haskell-Dawes Tubing Twisters—for belt drive—minor parts missing—no creels. Location: Plymouth.

2—6-Flyer 8" x 10" Haskell-Dawes Tubing Twisters—for belt drive—minor parts missing—no creels or spools. Location: Canada.

ALSO

One—100-Spd. Collins Ring Twister—6" gauge—4½" ring—about 2,000 4" x 8" spools & misc. emulsion pan parts for twisting paper—incomplete re. some accessories. Location: Virginia.

One—small ¾" Dia. extruding machine for Saran—vertical—steam-heated—U. S. Varidrive unit—550V—3 Ph.—60 cyls.—suitable for laboratory or experimental purposes. Used only 3 months—condition excellent. Location: Plymouth, Mass.

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(Continued from page 336)

of one engineer and make unauthorized greasing of motors taboo. This process lends itself admirably to the bulletin-board type of scheduling, since the date of the last greasing is always in plain view.

3. One boiler-maintenance problem that has given trouble in many plants is air-heater and economizer-tube fouling.

This problem was particularly acute in our plant with underfeed stokers. These stokers required outages in 3 or 4 mo. after cleaning to turbine air-heater tubes or to replace them if the turbine could not be run through. After trying different coatings, aluminum, and aluminum-clad tubes, we finally overcame this problem by installing a cold-air bypass on the air heater and thermocouples to measure air-heater tube-metal temperatures. By bypassing cold air at low and medium loads and maintaining a minimum tube temperature of 210° F., we eliminated the air-heater fouling.

The economizer fouling is still with us. Besides limiting heat pick-up in the economizer, it causes excessively high draft losses. We have been unable to clean the tubes adequately with caustic washes because, even though the deposit is loosened, lack of access prevents us from washing the deposits out.

4. Another pressing maintenance problem is the one posed by wear on pneumatic ash-handling systems. We had always considered that it was the abrasiveness of our particular ash from underfeed stokers that was causing the trouble, but a manufacturer's representative advanced the idea that pneumatic ash systems are worn out just as rapidly when lightly loaded or when practically empty except for a little dust as when they are heavily loaded with abrasive ash.

Working on this theory, we started a campaign to cut the use of the system to a minimum by trying to keep the system fully loaded at all times. Various methods were used, and I believe they have been effective. Aside from the jet-steam savings involved, repair-parts purchases have decreased materially.

5. One power-plant engineer had a pressing problem in steam-trap maintenance. He was having difficulty with call-backs on improper trap action after repairs. He solved this problem by setting up a test stand with a steam-reducing valve; water and compressed air were piped into a leg feeding the trap. With this stand, before they installed a trap his men were able to test each trap for the conditions under which it was to operate.

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An * indicates additional data in the 1952-53 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

*Abbott Machine Co.	239	T
Acme Coppersmithing Co.	284	E
Acme Steel Co.	34	P
Aldon Spinning Mills	325	G
Alemite Div., Stewart-Warner Corp.	118	M
Allen-Bradley Co.	3rd Cover	F
Allen Mfg. Co.	300	O
*Allentown Bobbin Wks., Inc.	204	T
*Allen Warper Co.	311	R
*Allis-Chalmers Mfg. Co.	51	F Q
American Crayon Co.	314	E L R
American Cyanamid Co., Textile Resin Dept.	259	C
American & Efird Mills, Inc.	313	G
*American Lava Corp.	183	L RT
American Lumber & Treating Co.	264	B
*American Monorail Co.	271	P
American Schweiter Co.	165	T
American Steel & Wire Div.	225	O
American Viscose Corp. (Yarns)	181	G
American Viscose Corp. Textile Chemical Dept.	211	C
Antara Chemicals Div. of General Dyestuff Corp.	19	C
Armour & Co., Industrial Soap Dept.	251	C
Armstrong Cork Co., (Cots)	58-59	T
Armstrong Cork Co., (Roll Covering)	38	R
*Ashworth Bros., Inc.	36	T
*Atkinson, Haserick & Co.	21 to 25	T
Atlantic Chemical Corp.	145	C
Atlantic Rayon Corp.	284	G
*Atlas Electric Devices Co.	314	K
Backus Machine Works	301	T
*Barber Colman Co., Textile Div.	317	R
Barco Mfg. Co.	283	H
Barnes Textile Associates, Inc.	318	N
Bausch & Lomb Optical Co.	196	N
Bellows Co., The	243	H
Bemis Bro. Bag Co.	242	P
Bendix Aviation Corp., Eclipse Machine Div.	287	T
*Bersworth Chemical Co.	303	C
Binney & Smith Co.	325	E L R
Boger & Crawford	171	G
*Booth Co., Benjamin	208	T
*Brinton Co., H.	161	L
Bristol Co., The	54	K
Bryant Chemical Corp.	114	C
Buffalo Pumps, Inc.	218	H
Burlington Engineering Co., Inc.	43	E
*Butterworth & Sons Co., H. W.	110	E

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*Caldwell Co., Inc., W. E.	328	B, E
Carbic Color & Chem. Co.	141	C
Carbide & Carbon Chemicals Co., Textile Fibers Dept., a div. of Union Carbide & Carbon Corp.	184	G
Carniti & Co., A.	47	T
Celanese Corp. of America, Chemical Div.	263	C
Yarn Div.	64-65	G
Century Electric Co.	20	F
Chemsteel Construction Co., Inc.	327	B
Chesapeake & Ohio Railway	289	N
*Chicago Pneumatic Tool Co.	293	H
Ciba Co.	217	C
Cities Service Oil Co.	149	M
Clark Equipment Co., Industrial Truck Div.	238	P
Cleaver-Brooks Co.	129	Q
Clinton Foods Inc.	339	C
*Cocker Machine & Fdry. Co.	195	R
*Cole Mfg. Co., R. D.	282	B, E
Colgate-Palmolive-Peet Co.	8	C
*Colson Corp.	278	P
Columbia-Geneva Steel Div.	225	O
*Continental-Diamond Fibre Co.	302	P
*Cook-P & N Machine Co., Inc.	116	E
Corn Products Refining Co.	50	C
*Crane Co.	56	H
Crane Mfg. Co.	292	L
*Crompton & Knowles Loom Wks.	13	R
Crucible Steel Co.	207	O
*Curlator Corp.	253	T
*Curtis & Marble Machine Co.	280	T
Dana Warp Mills	323	G
Daniels, Inc., C. R.	274	P
*Darnell Corp., Ltd.	270	P
*Dary Ring Traveler Co.	306	T
Dayton Rubber Co., The	48-49	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	323	T
Dodenhoff Co., Inc., W. D.	291	T
Dodge Mfg. Co.	295	Q
Dolge Co., C. B.	274	B
Dow Chemical Co.	205	C
*Dow Corning Corp.	267	C
*Draper Corporation	1	R
Dronsfield Bros. Ltd.	313	T
*DuPont de Nemours & Co., E. I., Dyestuff Div.	175	C
Electrochemical Dept.	189	C
Plastics Div.	187	O
Textile Fibers Dept.	197	G
*Durant Mfg. Co.	258	K
Durkee-Atwood Co.	127	Q
Edroy Products Co.	320	N
Eisenberg Fibers, Inc.	325	G
Emerson Apparatus Co.	286	K
Erick-Gross Corp.	18	L
Ericsson Telephone Sales Corp.	232	K
*Eriez Mfg. Co.	248	T
Fafnir Bearing Co.	57	O, Q
Fairbanks Co., The	254	P
Fairbanks, Morse & Co.	297	H
Fairgate Rule Co., The	327	K
Falls Yarn Mills	288	G
Federal Fibre Corp.	290	T
Felters Co., The	219	L, RT
*Fidelity Machine Co., Inc.	182	L
Fielden Inst. Div., Robertshaw-Fulton Controls Co.	256	K
*Fletcher Works	190	T
*Foster Machine Co.	178	T
Foxboro Co.	275	K
Franklin Process Co.	35	G
*Fuller Brush Co.	309	T
Gardner-Denver Co.	10	H
Gaylord Container Corp.	125	P
Geigy Co., Inc.	2	C
General Chemical Div., Allied Chem. & Dye Corp.	223	C
*General Electric Co.	172-173, 188, 299	F, Q
Glasco Equipment Corp.	240	E
Globe Dye Works	236	G
Goodrich Chemical Co., B. F.	216	C
Goodyear Tire & Rubber Co., Chemical Div.	9	C
*Grinnell Co., Inc.	16	H
Gubelin International Corp.	234	T
Gulf Oil Corp.—Gulf Refining Co.	39	M
*Harwood & Son, Geo. S.	292	T
*Haskell-Dawes Machine Co., Inc.	298	T
*Heany Industrial Ceramics Corp.	328	L, RT
*Heim Co., The	42	R
Heineman Corp., O. Div. of Aetna Industrial Corp.	176	G
*Herr Mfg. Co., Inc.	167	T
Hilton-Davis Chemical Co.	53	C
Hinde & Dauch Paper Co.	226	P
*Howard Bros. Mfg. Co.	45	T
Hubinger Co., The	46	C
*Hunter Machine Co., Jas.	203	E
*Huyck & Sons, F. C.	318	E
Hyatt Bearings Div., General Motors Corp.	249	O, Q
*Ideal Industries, Inc.	265	T
Industrial Brush Co.	286	E

*Industrial Dryer Corp.	278	E
*Industrial Heat Eng'g. Co.	308	E
Industrie-Werke-Karlsruhe	315	E
Ingolstadt	323	T
Iselin & Co., Inc., Wm.	261	N
*Ives Co., L. T.	294	L
*Jenkins Sons Inc., M. W.	210	E
*Jiffy Textile Marker Co.	329	E L R
Johnson Machine Wks., Chas. B.	230	R
Kastrinsky Machine Co., Inc.	323	L
Keever Starch Co.	235	C
*Kidde & Co., Walter	180	B
Knitting Arts Exhibition	150	N
*Kold-Hold Mfg. Co.	220	E O
Kuljian Corp., The	324	N
*Lambeth Rope Corp.	323	RT
*Laurel Soap Mfg. Co., Inc.	193	C
Lazenby Co., F. A., The	292	T
*Leighton Machine Co.	157	L
Lincoln Engineering Co.	221	M
*Link-Belt Co.	7, 32	Q
*Loper Co., Ralph E.	329	N
Main Co., Chas. T.	326	N
Manhattan Rubber Div.	26	Q
Manheim Mfg. & Belting Co.	52	Q
Marshall & Williams Corp.	301	E
*M-B Mfg. Co., Inc.	262	L RT
*McBride Co., Inc., Ed. J.	212	R
McCreary Machine Company	227	E
McGraw-Hill Book Co.	290	N
*Meese, Inc.	316	P
Mellor, Bromley & Co., Ltd.	222	L
*Merrow Machine Co.	321	E
Micro Switch Div.	252	F
*Milton Machine Wks., Inc.	276	R
Minneapolis-Honeywell Reg. Co., Industrial Div.	62-63	K
Micro Switch Div.	252	F
Minnesota Mining & Mfg. Co.	269	E R
Mobilift Corp.	202	P
*Monsanto Chemical Co., Textile Chemicals Dept.	69	C
Morris Fur Co.	326	R
*Mt. Hope Machinery Co.	310	E
National Aniline Div., Allied Chem. & Dye Corp.	17	C
National Ring Traveler Co.	327	T
National Tube Div.	225	O
Naugatuck Chemical Div., U. S. Rubber Co.	61	C
New Departure Div. of General Motors	15	O Q
N. Y. & N. J. Lubricant Co.	280	M
Nopco Chemical Co.	33	C
Norris Bros.	296	R
Oakite Products, Inc.	340	C
*Onyx Oil & Chem. Co.	191	C
Pabst Sales Co.	312	C
Page Fence Association	303	B
*Parks-Cramer Co.	237	A D
*Perfecting Service Co.	250	H
Permutit Co.	319	B
Pfister Chemical Works	320	C
Pfizer & Co., Inc., Chas.	147	C
Philadelphia Quartz Co.	286	C
Pittsburgh Coke & Chem. Co.	139	C
Pittsburgh Plate Glass Co., Fiber Glass Div.	241	G
*Platt Bros. (Sales) Ltd.	22-23	T
Precision Gear & Machine Co.	322	Q
*Prince, Smith & Stells	24-25	T
*Proctor & Schwartz, Inc.	198	E L
Pure Oil Co., The	27	M
Raybestos-Manhattan, Inc., Manhattan Rubber Div.	26	Q
Red Ray Mfg. Co., Inc.	316	E
Reeves Pulley Co.	213	Q
*Reiner Inc., Robert	166A	L
Reliance Elec. & Eng'g. Co.	179	F Q
*Rhoads & Sons, J. E.	5	R
Richmond Oil, Soap & Chem. Co.	290	C
*Ridge Tool Co.	201	H
*Robert & Co., Associates	2nd Cover	N
*Rohm & Haas Co.	209	C
Rollway Bearing Co., Inc.	60	O Q
Rome Soap Mfg. Co.	323	C
*Roy & Son Co., B. S.	322	T
Ryerson & Son Inc., J. T.	112	O
*Saco-Lowell Shops	6	T
*Sargent's Sons Corp., C. G.	281	E
Schlafhorst & Co., W.	11	RT
Schweiter Ltd.	165	T
*Scott Testers, Inc.	319	K
Selig Co., The	342	D
Servospeed, Div. of Electro Devices, Inc.	244	T
SKF Industries, Inc.	55	O Q
Societe Alsacienne De Constructions Mecaniques	21	T
Socony-Vacuum Oil Co., Inc.	29	M
Solvay Process Div., Allied Chem. & Dye Corp.	231	C
*Sonoco Products Co.	121	E T
*Southern Shuttles Div., Steel Heddle Mfg. Co.	304, 305	R
*Speizman Co., Inc., Morris	282	L

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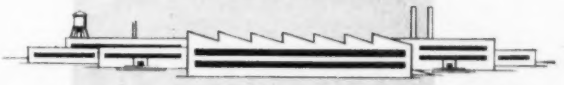

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Spindles, Motors & Machines, Ltd.	234	T
Staley Mfg. Co., A. E.	143	C
*Standard Chemical Prod., Inc.	133	C
*Standard Fabricators Inc.	285	E
*Standard Pressed Steel Co.	279	O
Star Woolen Co.	12	G N
*Steel Heddle Mfg. Co.	304, 305	R
*Stephens-Adamson Mfg. Co.	68	O Q
*Sterling Ring Traveler Co.	276	T
*Stop-Motion Devices Corp.	169	L
Sun Oil Company	108	C
Superior Combustion Industries, Inc.	326	Q
*Supreme Knitting Mach. Co., Inc.	163	L
Swift & Co., Soap Dept.	255	C
Talcott, Inc., James	311	N
Tennant Co., G. H.	260	B
Tenn. Coal & Iron Div.	225	O
Tennessee Corp.	341	C
*Terrell Machine Co., Inc.	229	R
Textile Banking Co.	215	N
Textile Equipment Corp.	291	T
Textile Laboratories, The	324	E
Textile Machy. Import Co.	44	E
*Textile Machine Wks.	70, 123, 166B-166C	L
Textile Recorder Exhibition	307	N
Thomson Industries, Inc.	246	O Q
Tide Water Assoc. Oil Co.	14	M
Toledo Scale Co.	268	K
*Tompkins Bros. Co.	214	L
*Torrington Co., The (Needles)	185	L
*Torrington Co., The (Bearings)	174	O Q
Tower Iron Works	266	E
Towmotor Corp.	206	P
Trust Co. of Ga.	309	N
Turbo Machine Co.	152	L
Unionmatex, Textilmaschinen-Union, G.M.B.H.	37	E R T
*U. S. Ring Traveler Co.	288	T
*U. S. Rubber Co., Mechanical Goods Div.	192	T
Naugatuck Chem. Div.	61	C
U. S. Steel Corp.	225	O
U. S. Steel Export Co.	225	O
U. S. Steel Supply Div.	225	O
Universal Detergents, Inc.	288, 292	N
*Universal Winding Co.	134	T
Vacuum Can Co.	224	N
*Veeder-Root, Inc.	4th Cover	K T
Victor Ring Traveler Co.	186	
Virginia-Carolina Chem. Corp.	245	G
*Walton & Lonsbury	257	O
*Warner Electric Brake & Clutch Co.	40, 41	F Q
*Warner & Swasey Co.	28	T
Watson-Williams Mfg. Co.	328	R
Westinghouse Electric Corp., Lamp Div.	273	F
Motors & Controls	30-31	F Q
Tex. Industry	66-67	Q
West Point Fdry. & Mach. Co.	277	R
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White & Co.	272	A T
Whitehead Engineering Co.	284	
*Whitin Machine Works	177	L
Wildman Mfg. Co.	159	L
*Wolf & Co., Jacques	247	C
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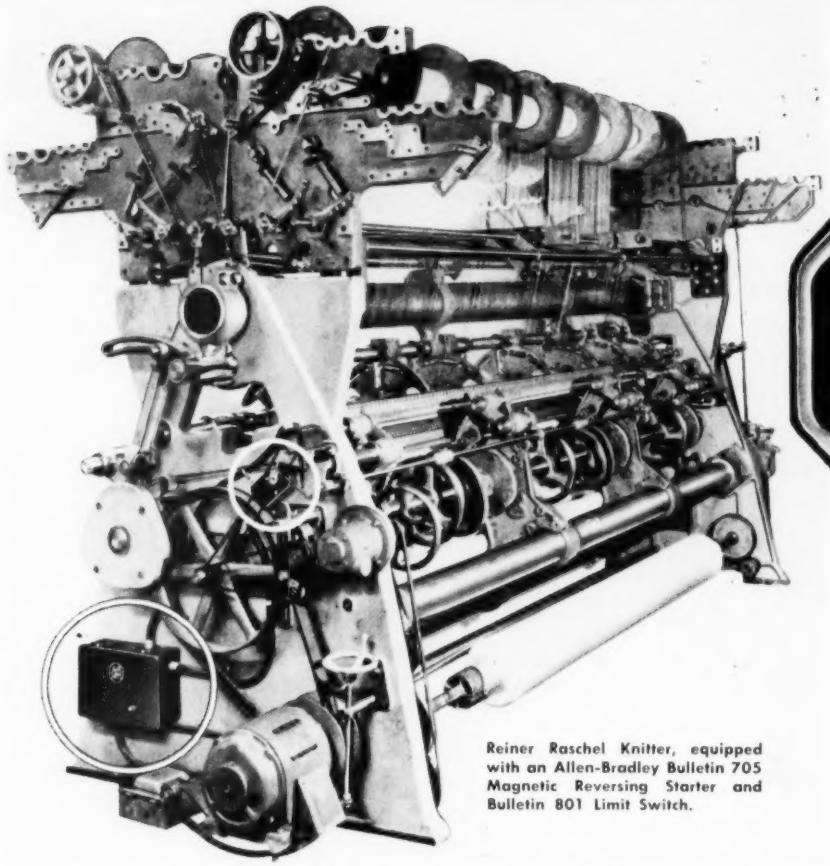

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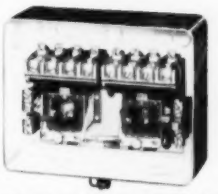

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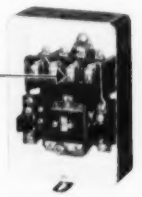

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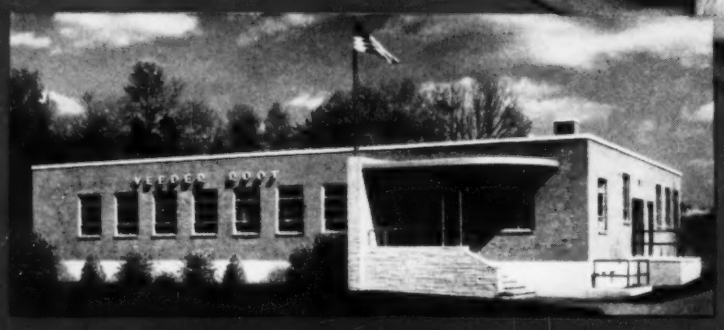

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